USDA United States Department of Agriculture

Natural Resources Conservation Service

Washington Basin Outlook Report January 1, 2001

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:

Local Natural Resources Conservation Service Field Office

or

Scott Pattee
Water Supply Specialist
Natural Resources Conservation Service
2021 E. College Way, Suite 214
Mt. Vernon, WA 98273-2873
(360) 428-7684

or

Betty Schmitt
Public Affairs Specialist
Natural Resources Conservation Service
316 W. Boone Ave., Suite 450
Spokane, WA 99201-2348
(509) 323-2912

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Washington
Water Supply Outlook

January 2001

General Outlook

After several record breaking snowpack and precipitation years, Washington is experiencing a change of weather patterns that many Northwesterners do not care to witness. November and December were reported to be the fourth driest on record for Washington. Average temperatures were also reported to be much below normal for the same two-month period for the state and when averaged across the nation, a new record low was set. With over one-half of the snow accumulation season yet to go, forecasters are banking on near to above average accumulation over the next few months. Forecast models develop higher levels of confidence as the season progresses.

Snowpack

The January 1 statewide SNOTEL readings were below average at 72%. The Nooksack River Basin snow surveys reported the lowest readings at 50% of average. Readings taken in the Stemilt Creek Basin reported the highest at 105% of average. Westside averages from SNOTEL and January 1 snow surveys included the North Puget Sound river basins with 54%, the Central Puget river basins with 77%, and the Lewis-Cowlitz basins with 80%. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 67% and the Wenatchee area with 75%. Snowpack in the Spokane River Basin was at 64% and the Pend Oreille River Basin, including Canadian data, had 64% of average. Maximum snow cover in Washington was at Paradise Park SNOTEL near Mount Rainer with a water content of 16.9 inches. This site would normally have 23.6 inches of water content on January 1. Last year at this time Paradise Park had 33.3 inches of snow water. The highest average in the state was Spencer Meadows SNOTEL in the Lewis River Basin with 133% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	63	64
Newman Lake	54	80
Pend Oreille	73	64
Okanogan	72	68
Methow	61	60
Similkameen	138	57
Wenatchee	89	76
Chelan	58	57
Stemilt Creek	182	105
Yakima	75	67
Ahtanum Creek	103	56
Walla Walla	106	80
Lower Snake	69	73
Cowlitz	69	66
Lewis	76	94
White	49	51
Green	67	57
Puyallup	49	51
Cedar	74	77
Snoqualmie	65	70
Skykomish	75	76
Skagit	60	60
Baker	49	53
Nooksack	47	50
Olympic Peninsula	122	89

Precipitation

During the month of December, the National Weather Service and Natural Resources Conservation Service climate stations reported well below average precipitation for Washington river basins. The highest percent of average in the state was at Grouse Camp SNOTEL in the Upper Yakima basin. Grouse Camp reported 86% of average for a total of 3.9 inches. The average for this site is 4.56 inches for December. Averages for the water year varied from 73% of average in the Walla Walla river basins to 49% of average in both the Spokane and Colville – Pend Oreille river basins. The highest individual site average for the water year was 87% of average at Mill Creek Dam near Walla Walla.

RIVER BASIN	DECEMBER PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	52	49
Colville-Pend Oreille	43	49
Okanogan-Methow	51	52
Wenatchee-Chelan	56	52
Upper Yakima	59	51
Lower Yakima	62	52
Walla Walla	56	73
Lower Snake	64	70
Cowlitz-Lewis	53	52
White-Green-Puyallup	52	57
Central Puget Sound	51	54
North Puget Sound	50	52
Olympic Peninsula	50	61

Reservoir

Early season reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for winter collection, fisheries management and power generation. Reservoir storage in the Yakima Basin was 235,000-acre feet, 50% of average for the Upper Reaches and 96,900-acre feet, 89% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 93% of average for January 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 27,000 acre feet, 21% of average and 11% of capacity; Chelan Lake, 351,100 acre feet, 93% of average and 52% of capacity; and Ross Lake at 122% of average and 68% of capacity.

BASIN	PERCENT OF CAPACITY	PERCENT OF AVERAGE
Spokane	11	21
Colville-Pend Oreille	67	77
Okanogan-Methow	53	93
Wenatchee-Chelan	52	93
Upper Yakima	28	50
Lower Yakima	42	89
North Puget Sound	68	122

For more information contact your local Natural Resources Conservation Service office.

Streamflow

Early season forecasts indicate below to near normal summer flows for most streams in the state. They vary from 101% of average for Mill Creek at Walla Walla to 65% of average for Ahtanum Creek near Tampico. January forecasts for some Western Washington streams include: Cedar River near Cedar Falls, 95%; Green River, 97%; and Skagit River, 81%. Some Eastern Washington streams include the Yakima River near Parker, 78%: Wenatchee River at Peshastin, 75%; and Spokane River near Post Falls, 80%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS.

Streamflows reported for December varied from well below to near average. The Columbia River at Birchbank, had the highest flows with 75% of average. The Cle Elum River near Roslyn with 14% of average, was the lowest in the state. Other streamflows were the following percentage of average: the Priest River, 46%; the Columbia at Grand Coulee Dam, 58%; the Spokane at Spokane, 32%; the Columbia below Rock Island Dam, 55%; the Cowlitz River at Castle Rock, 30%; and the Snake River below Ice Harbor Dam, 53%.

BASIN	PERCENT OF AVERAGE MOST PROBABLE FORECAST (50 PERCENT CHANCE OF EXCEEDENCE)
Spokane	80-83
Colville-Pend Oreille	70-78
Okanogan-Methow	72-76
Wenatchee-Chelan	75-84
Upper Yakima	80-88
Lower Yakima	65-87
Walla Walla	97-101
Lower Snake	80-92
Cowlitz-Lewis	81-84
White-Green-Puyallup	96-97
Central Puget Sound	93-95
North Puget Sound	81-91
Olympic Peninsula	88-96

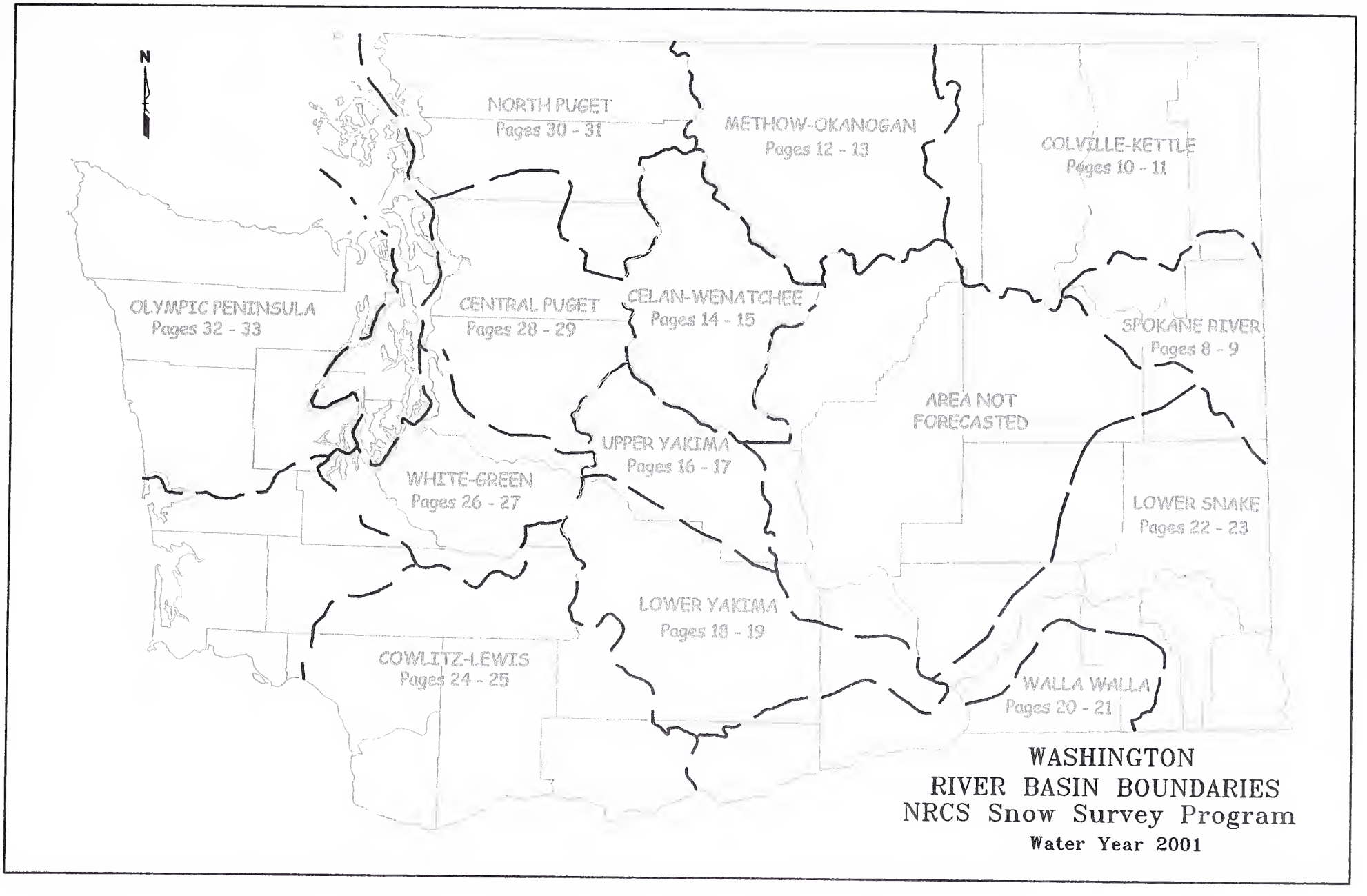
STREAM	PERCENT OF AVERAGE DECEMBER STREAMFLOWS
Pend Oreille Below Box Canyon	49
Kettle at Laurier	68
Columbia at Birchbank	75
Spokane at Long Lake	40
Similkameen at Nighthawk	51
Okanogan at Tonasket	69
Methow at Pateros	69
Chelan at Chelan	41
Wenatchee at Pashastin	33
Yakima at Cle Elum	21
Yakima at Parker	23
Naches at Naches	27
Grande Ronde at Troy	46
Snake below Lower Granite Dam	58
SF Walla Walla near Milton Freewater	55
Lewis at Ariel	36
Cowlitz below Mayfield Dam	29
Skagit at Concrete	37

For more information contact your local Natural Resources Conservation Service office.

BASIN SUMMARY OF SNOW COURSE DATA

JANUARY 2001

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
AHTANUM R.S.	3100	1/01/01	---	2.0E	3.0	3.5
ALPINE MEADOWS PILL	3500	1/01/01	---	15.1	21.6	17.9
ASHLEY DIVIDE	4820	1/01/01	14	2.8	2.2	3.4
BADGER PASS PILLOW	6900	1/01/01	---	6.9	10.6	14.2
BARKER LAKES PILLOW	8250	1/01/01	---	5.6	3.3	6.8
BASIN CREEK PILLOW	7180	1/01/01	---	4.0	2.7	3.6
BEAVER CREEK TRAIL	2200	12/27/00	19	4.8	4.6	--
BERNE-MILL CREEK (d)	3170	12/28/00	37	9.6	8.9	11.2
BLACK PINE PILLOW	7100	1/01/01	---	3.9	4.3	4.9
BLEWETT PASS#2PILLOW	4270	1/01/01	23	4.7	4.4	8.3
BUMPING LAKE (NEW)	3400	12/27/00	28	6.6	1.9	7.5
BUMPING RIDGE PILLOW	4600	1/01/01	---	7.9	10.5	9.6
BUNCHGRASS MDWPILLOW	5000	1/01/01	---	8.6	13.5	10.9
CAYUSE PASS	5300	1/01/01	---	17.3E	33.0	32.4
CHESSMAN RESERVOIR	6200	12/29/00	10	1.4	.6	1.5
CHIWAUKUM G.S.	2500	12/28/00	17	4.3	3.0	4.8
COMBINATION PILLOW	5600	1/01/01	---	2.2	1.4	2.3
COPPER BOTTOM PILLOW	5200	1/01/01	---	3.4	4.6	4.7
CORRAL PASS PILLOW	6000	1/01/01	---	8.6	14.9	13.5
COUGAR MTN. PILLOW	3200	1/01/01	---	5.1	3.5	8.3
COYOTE HILL	4200	12/27/00	16	3.0	3.6	4.1
DALY CREEK PILLOW	5780	1/01/01	---	4.3	4.0	5.3
DISCOVERY BASIN	7050	12/27/00	22	4.4	3.4	4.4
DIX HILL	6400	12/31/00	20	4.5	4.9	5.0
DOMMERIE FLATS	2200	12/27/00	20	4.9	.0	3.9
EAST RAGGED SADDLE	3740	1/01/01	33	8.2	11.7	9.9
ELBOW LAKE PILLOW	3200	1/01/01	---	7.8	18.9	14.1
EMERY CREEK PILLOW	4350	1/01/01	---	3.6	6.1	7.2
FARRON CAN.	4000	12/28/00	19	3.9	6.1	7.0
FISH CREEK	8000	12/27/00	21	5.1	2.9	4.5
FISH LAKE	3370	12/27/00	36	9.6	13.1	10.7
FISH LAKE PILLOW	3370	1/01/01	34	9.0	14.5	12.4
FLATTOP MTN PILLOW	6300	1/01/01	---	10.2	15.3	21.0
FOURTH OF JULY SUM	3200	12/29/00	20	4.5	3.9	3.4
FREEZEOUT CK. TRAIL	3500	12/28/00	14	2.6	4.1	--
FROHNER MDWS PILLOW	6480	1/01/01	---	3.2	2.7	3.4
GRAVE CRK PILLOW	4300	1/01/01	---	4.8	6.1	7.7
GREEN LAKE PILLOW	6000	1/01/01	25	6.2	6.9	9.0
GROUSE CAMP PILLOW	5380	1/01/01	---	5.9	7.2	8.9
HAND CREEK PILLOW	5030	1/01/01	---	2.7	4.2	5.5
HARTS PASS PILLOW	6500	1/01/01	42	11.1	18.5	17.9
HELL ROARING DIVIDE	5770	12/29/00	25	4.8	11.3	13.0
HIGH RIDGE PILLOW	4980	1/01/01	---	8.4	7.4	9.7
HOLBROOK	4530	12/28/00	12	2.2	3.3	4.0
HOODOO BASIN PILLOW	6050	1/01/01	---	10.0	15.5	19.0
HUMBOLDT GLCH PILLOW	4250	1/01/01	---	4.9	6.5	5.6
JUNE LAKE PILLOW	3200	1/01/01	---	11.8	17.4	11.5
KELLOGG PEAK	5560	1/04/01	34	8.6	7.0	--
KLESILKWA CAN.	3450	12/28/00	9	2.5	6.0	3.2
KRAFT CREEK PILLOW	4750	1/01/01	---	4.5	7.4	6.6
LESTER CREEK	3100	1/01/01	---	3.2E	7.2	8.0
LOLO PASS PILLOW	5240	1/01/01	33	7.4	12.1	12.6
LONE PINE PILLOW	3800	1/01/01	---	12.1	16.4	12.0
LOOKOUT PILLOW	5140	1/01/01	---	8.2	12.7	13.5
LOST HORSE PILLOW	5000	1/01/01	26	7.4	5.2	15.3
LOST LAKE PILLOW	6110	1/01/01	---	11.4	23.0	25.8
LUBRECHT FOREST NO 3	5450	12/29/00	13	2.4	3.0	2.6
LUBRECHT FOREST NO 4	4650	12/29/00	9	1.3	1.0	1.4
LUBRECHT FOREST NO 6	4040	12/29/00	11	1.9	1.2	1.6
LUBRECHT HYDROPLOT	4200	12/29/00	14	1.9	2.0	2.8
LUBRECHT PILLOW	4680	1/01/01	---	2.5	2.4	2.4
LYMAN LAKE PILLOW	5900	1/01/01	---	15.8	22.3	25.4
LYNN LAKE	4000	1/01/01	---	4.9E	6.5	7.6
MARIAS PASS	5250	12/28/00	21	5.8	5.4	6.7
MEADOWS PASS PILLOW	3240	1/01/01	---	8.9	7.3	9.5
MERRITT	2140	12/28/00	26	7.0	1.9	7.1
MICA CREEK PILLOW	4750	1/01/01	---	8.6	12.4	--
MISSEZULA MTN CAN.	5080	12/29/00	14	2.9	2.1	5.1
MOOSE CREEK PILLOW	6200	1/01/01	---	4.2	8.5	7.1
MORRISSEY RIDGE CAN.	6100	1/01/01	---	4.8	8.3	15.4
MORSE LAKE PILLOW	5400	1/01/01	---	7.2	19.6	19.1
MOSES MTN PILLOW	4800	1/01/01	---	3.4	6.6	6.5
MOSQUITO RDG PILLOW	5200	1/01/01	---	7.7	18.2	15.7
MOULTON RESERVOIR	6850	12/26/00	17	3.8	4.0	2.6
MOUNT CRAG PILLOW	4050	1/01/01	---	10.1	9.2	11.3
MT. KOBAU CAN.	5500	12/29/00	20	4.9	4.4	6.2
MOUNT GARDNER PILLOW	2860	1/01/01	---	6.4	5.5	5.8
N.F. ELK CR PILLOW	6250	1/01/01	---	3.9	4.9	4.6
NEZ PERCE CMP PILLOW	5650	1/01/01	---	4.1	6.3	5.7
NOISY BASIN PILLOW	6040	1/01/01	---	7.3	16.1	17.2
OLALLIE MDWS PILLOW	3960	1/01/01	---	13.9	19.0	20.3
OLALLIE MEADOWS	3630	1/01/01	---	12.4E	--	18.2
OPHIR PARK	7150	12/31/00	24	5.6	6.0	7.0
PARADISE PARK PILLOW	5500	1/01/01	---	16.9	33.3	23.6
PARK CK RIDGE PILLOW	4600	1/01/01	42	11.3	18.4	18.4
PETERSON MDW PILLOW	7200	1/01/01	---	4.3	2.8	4.2
PIGTAIL PEAK PILLOW	5900	1/01/01	---	12.3	21.6	20.1
PIKE CREEK PILLOW	5930	1/01/01	---	5.0	8.6	11.4
PIPESTONE PASS	7200	12/29/00	13	2.0	1.2	2.1
POPE RIDGE PILLOW	3540	1/01/01	27	5.8	6.4	9.1
POTATO HILL PILLOW	4500	1/01/01	---	9.1	7.2	10.5
QUARTZ PEAK PILLOW	4700	1/01/01	---	6.8	12.7	8.5
RAINY PASS PILLOW	4780	1/01/01	---	8.4	15.6	15.4
REX RIVER PILLOW	1900	1/01/01	20	7.4	13.9	10.5
ROCKER PEAK PILLOW	8000	1/01/01	---	7.0	4.1	6.4
SF THUNDER CK AM	2200	1/01/01	---	2.2E	3.6	4.5
SADDLE MTN PILLOW	7900	1/01/01	---	7.1	8.5	11.1
SALMON MDWS PILLOW	4500	1/01/01	14	2.9	2.7	3.9
SASSE RIDGE PILLOW	4200	1/01/01	---	9.3	11.0	12.4
SAVAGE PASS PILLOW	6170	1/01/01	33	7.3	10.3	11.0
SAWMILL RIDGE	4700	1/01/01	---	5.5E	10.5	13.3
SCHREIBERS MDW AM	3400	1/01/01	---	11.8E	25.2	21.9
SHEEP CANYON PILLOW	4050	1/01/01	---	10.9	6.9	15.2
SKALKAHO PILLOW	7260	1/01/01	---	7.4	8.6	9.8
SKOOKUM CREEK PILLOW	3920	1/01/01	---	6.1	13.9	12.0
SPENCER MDW PILLOW	3400	1/01/01	---	12.5	12.4	9.4
SPIRIT LAKE PILLOW	3100	1/01/01	---	2.4	.5	1.8
SPOTTED BEAR MTN.	7000	12/28/00	20	4.2	7.2	6.6
STAHL PEAK PILLOW	6030	1/01/01	---	8.0	13.7	16.0
STAMPEDE PASS PILLOW	3860	1/01/01	---	12.0	18.1	16.7
STEVENS PASS PILLOW	4070	1/01/01	42	10.7	14.0	15.3
STEVENS PASS SAND SD	3700	12/28/00	41	10.5	12.7	14.6
STORM LAKE	7780	12/27/00	26	6.0	3.8	5.4
SUNSET PILLOW	5540	1/01/01	---	6.2	9.6	13.5
SURPRISE LKS PILLOW	4250	1/01/01	---	13.6	19.8	20.2
TEN MILE LOWER	6600	12/29/00	15	3.0	2.3	3.0
TEN MILE MIDDLE	6800	12/29/00	21	4.3	3.0	4.7
TINKHAM CREEK PILLOW	3000	1/01/01	---	13.8	8.0	7.6
TOUCHET #2 PILLOW	5530	1/01/01	---	9.7	9.7	12.9
TRINKUS LAKE	6100	12/28/00	40	9.9	21.0	18.7
TRUMAN CREEK	4060	12/31/00	13	2.6	1.0	2.0
TUNNEL AVENUE	2450	12/28/00	30	8.5	5.4	8.1
TV MOUNTAIN	6800	1/01/01	---	5.6E	6.4	7.2
TWELVEMILE PILLOW	5600	1/01/01	---	5.4	7.8	7.2
TWIN LAKES PILLOW	6400	1/01/01	---	10.2	17.3	16.3
TWIN SPIRIT DIVIDE	3480	1/01/01	22	5.7	6.1	6.8
UPPER HOLLAND LAKE	6200	12/28/00	35	7.8	14.6	15.8
UPPER WHEELER PILLOW	4400	1/01/01	---	6.2	3.4	5.9
WARM SPRINGS PILLOW	7800	1/01/01	---	7.3	8.2	9.4
WEASEL DIVIDE	5450	12/28/00	29	6.4	11.9	15.3
WELLS CREEK PILLOW	4200	1/01/01	10	6.9	12.6	15.2
WHITE PASS ES PILLOW	4500	1/01/01	---	5.9	5.4	9.8


N
NORTH PUGET
Pages 30 - 31
METHOW-OKANOGAN
Pages 12 - 13
COLVILLE-KETTLE
Pages 10 - 11
OLYMPIC PENINSULA
Pages 32 - 33
CENTRAL PUGET
Pages 28 - 29
CELAN-WENATCHEE
Pages 14 - 15
SPOKANE RIVER
Pages 8 - 9
AREA NOT
FORECASTED
UPPER YAKIMA
Pages 16 - 17
WHITE-GREEN
Pages 26 - 27
LOWER SNAKE
Pages 22 - 23
LOWER YAKIMA
Pages 18 - 19
COWLITZ-LEWIS
Pages 24 - 25
WALLA WALLA
Pages 20 - 21
WASHINGTON
RIVER BASIN BOUNDARIES
NRCS Snow Survey Program
Water Year 2001

USDA NRCS

Natural Resources Conservation Service

Washington State

Snow, Water and Climate Services

Program Contacts

Leonard Jordan
State Conservationist
W. 316 Boone Ave., Suite 450
Spokane, WA 99201-2348
phone: 509-323-2961
fax: 509-323-2979
leonard.jordan@wa.usda.gov

Betty Schmitt
Public Affairs Specialist
W. 316 Boone Ave., Suite 450
Spokane, WA 99201-2348
phone: 509-323-2912
fax: 509-323-2909
betty.schmitt@wa.usda.gov

Scott Pattee
Water Supply Specialist
2021 E. College Way, Suite 214
Mount Vernon, WA 98273-2873
phone: 360-428-7684
fax: 360-424-6172
scott.pattee@wa.usda.gov

Chris Pacheco
Resource Conservationist
National Water and Climate Center
101 SW Main St., Suite 1600
Portland, OR 97204-3224
phone: 503-414-3056
fax: 503-414-3101
cpacheco@wcc.nrcs.usda.gov

Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
http://www.wa.nrcs.usda.gov/nrcs/CoopSnoSrvy.htm

Oregon:
http://crystal.or.nrcs.usda.gov/snowsurveys

Idaho:
http://idsnow.id.nrcs.usda.gov

National Water and Climate Center (NWCC):
http://www.wcc.nrcs.usda.gov

NWCC Anonymous FTP Server:
ftp.wcc.nrcs.usda.gov

USDA-NRCS Agency Homepages

Washington:
http://www.wa.nrcs.usda.gov/nrcs

NRCS National:
http://www.ftw.nrcs.usda.gov

USDA NRCS
Natural Resources Conservation Service

Washington State
Snow, Water and Climate Services

Field Office Contacts

Eastern Washington

Jimmie Gleaton
District Conservationist
232 Williams Lake Road
Colville, WA 99114-9638
509-685-0937
jimmie.gleaton@wa.usda.gov

Gary Mitchell
District Conservationist
301 Yakima Street, Room 301
Wenatchee, WA 98801-2966
509-664-0265
gary.mitchell@wa.usda.gov

Randy Kelley
District Conservationist
1251 Second Ave. South, Room 101
Okanogan, WA 98840-9723
509-422-2750
randy.kelly@wa.usda.gov

David Chain
District Conservationist
607 E. Mountain View
Ellensburg, WA 98926
509-925-8585
david.chain@wa.usda.gov

Western Washington

John Gillies
District Conservationist
6975 Hannegen Road
Lynden, WA 98205-1535
360-354-2035
john.gillies@wa.usda.gov

Kerry Perkins
District Conservationist
111 East 3rd, Room 2B
Port Angeles, WA 98362-3009
360-457-5091
kerry.perkins@wa.usda.gov

Monica Hoover
Wetland Specialist
1835 Black Lake Blvd SW, STE E
Olympia, WA 98512-5623
360-704-7752
monica.hoover@wa.usda.gov

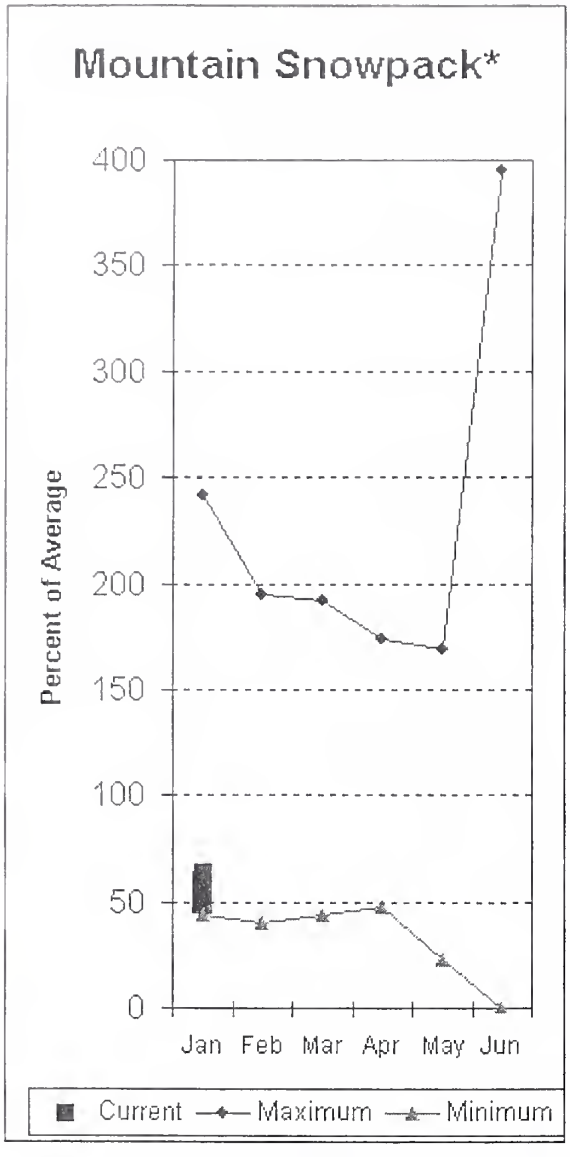
Scott Pattee
Water Supply Specialist
2021 E. College Way, Suite 214
Mount Vernon, WA 98273-2873
360-428-7684
scott.pattee@wa.usda.gov

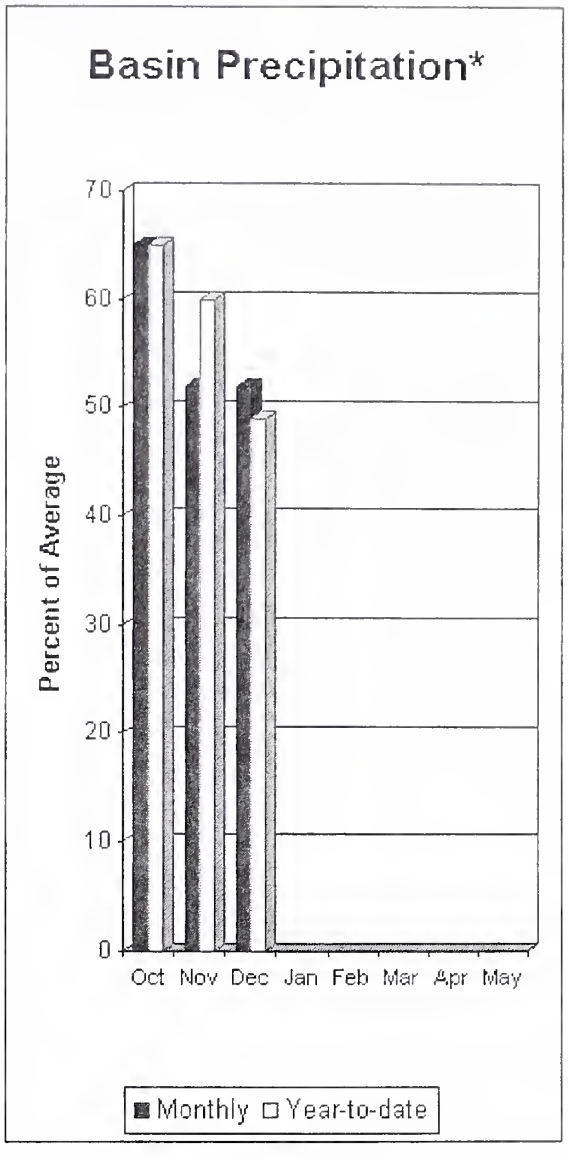
Data Collection Offices

Jon Lea
Oregon Data Collection Office
101 SW Main St., Suite 1300
Portland, OR 97204
503-414-3267
jon.lea@or.usda.gov

Ron Abramovich
Idaho Data Collection Office
9173 West Barnes, Suite C
Boise, ID 83709
208-378-5741
ron.abramovich@id.usda.gov

Spokane River Basin





*Based on selected stations

The January 1 forecasts for summer runoff within the Spokane River Basin are 80% of average near Post Falls and 83% at Long Lake. The forecast is based on a basin snowpack that is 64% of average and precipitation that is 49% of average for the water year. Precipitation for December was much below normal at 52% of average. Streamflow on the Spokane River at Long Lake, was 40% of average for December. January 1 storage in Coeur d'Alene Lake, was 27,000-acre feet, 21% of average and 11% of capacity. Snowpack at Quartz Peak SNOTEL site contained 6.8 inches of water, compared to the average January 1 reading of 8.5 inches. Average temperatures in the Spokane basin were 2 degrees below normal for December and 3 degrees below for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

SPOKANE near Post Falls (2)	APR-SEP	1326	1834	2180	80	2526	3034	2720
	APR-JUL	1290	1784	2120	81	2456	2950	2627
SPOKANE at Long Lake (2)	APR-JUL	1359	1997	2430	84	2863	3501	2905
	APR-SEP	1478	2150	2607	83	3064	3736	3128

SPOKANE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
COEUR D'ALENE	238.5	27.0	111.5	130.5

SPOKANE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SPOKANE RIVER	10	63	64
NEWMAN LAKE	1	54	80

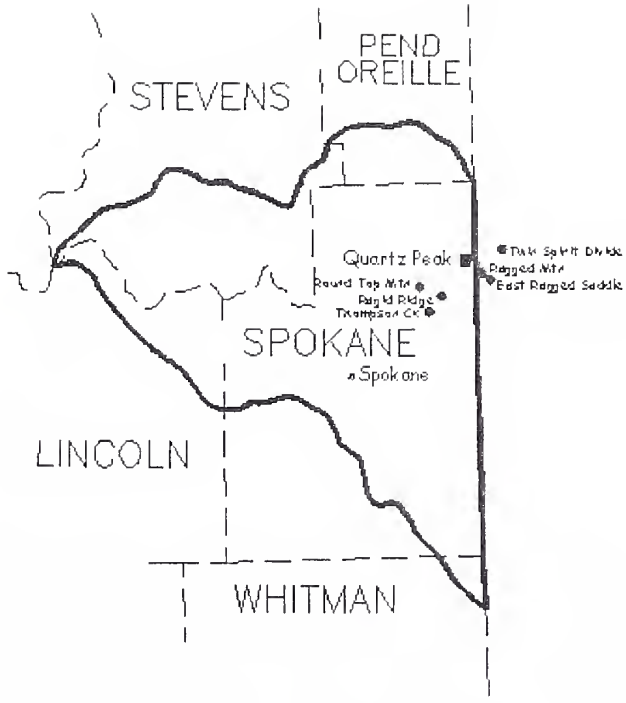
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

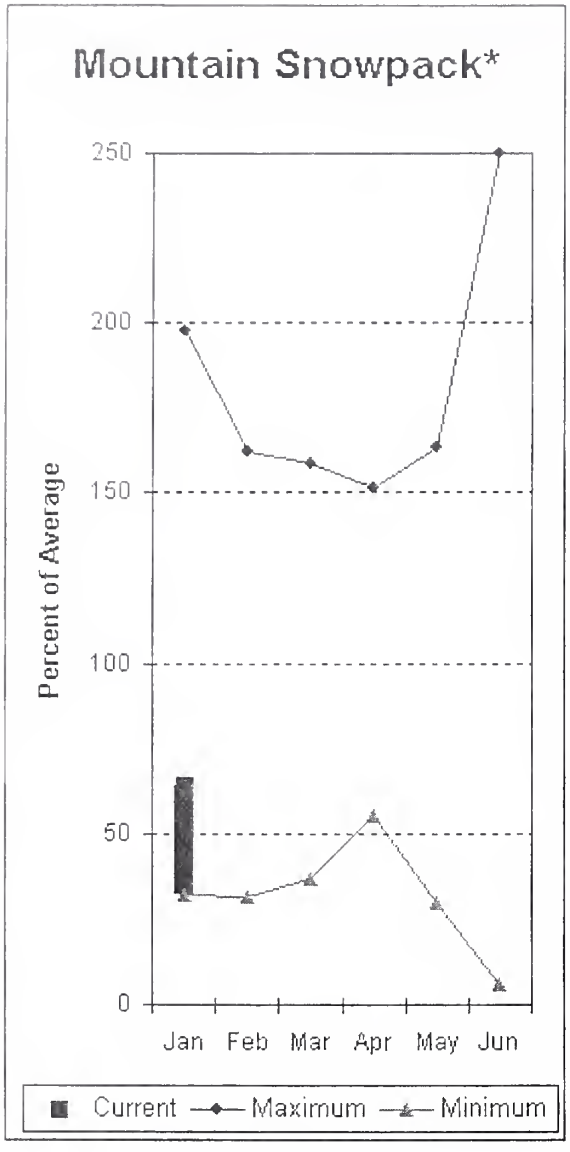
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

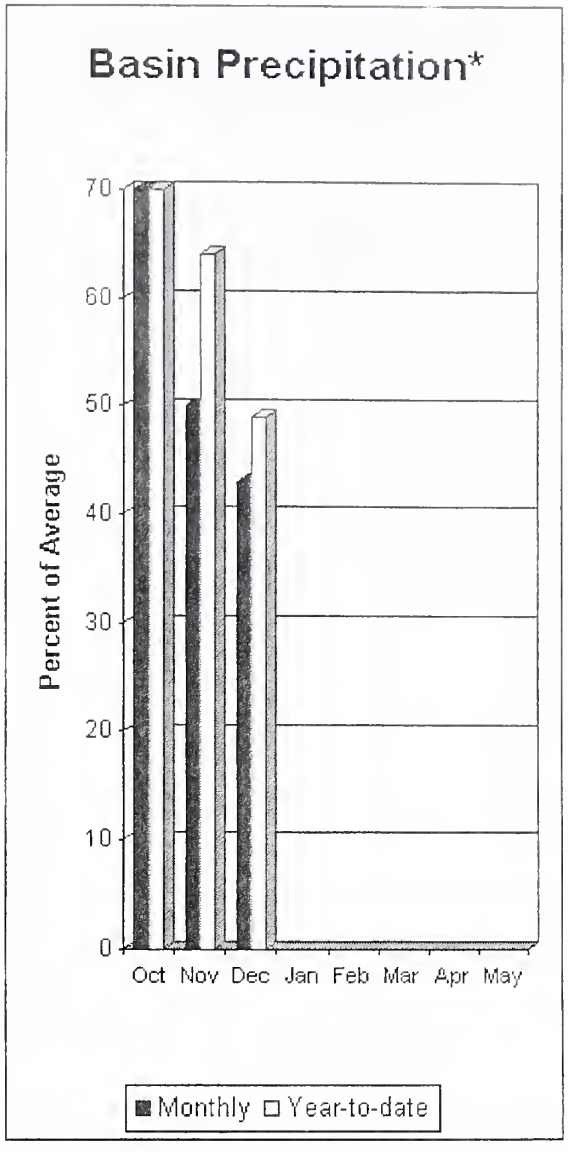
Spokane River Basin
Percent of Average
January 1, 2001

Snowpack - 64%
Precipitation - 49%
Reservoir - 21%



Colville - Pend Oreille River Basins





*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 78%, Colville at Kettle Falls is 73%, and Priest River near the town of Priest River is 70%. December streamflow was 49% of average on the Pend Oreille River, 75% on the Columbia at the International Boundary and 68% on the Kettle River. January 1 snow cover was 64% of average in the Pend Oreille Basin and 56% in the Kettle River Basin. Precipitation during December was 43% of average, bringing the year-to-date precipitation to 49% of average. Reservoir storage in Roosevelt and Banks lakes was reported to be 77% of average and 67% of capacity on January 1. Average temperatures were 2 degrees below normal for December and 3 below for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
PEND OREILLE Lake Inflow (2)	APR-JUL	5085	7559	9240	70	10921	13395	13150
	APR-SEP	4209	7717	10100	70	12483	15991	14370
PRIEST near Priest River (1,2)	APR-JUL	359	501	565	70	629	771	812
	APR-SEP	391	539	607	70	675	823	865
PEND OREILLE bl Box Canyon (2)	APR-JUL	5845	7986	9440	71	10894	13035	13380
	APR-SEP	5194	8234	10300	71	12366	15406	14590
CHAMOKANE CREEK near Long Lake	MAY-AUG	2.45	5.51	7.60	89	9.69	12.75	8.52
COLVILLE at Kettle Falls	APR-SEP	43	75	96	73	117	149	131
	APR-JUL	38	68	88	73	108	138	120
KETTLE near Laurier	APR-SEP	1039	1278	1440	78	1602	1841	1854
	APR-JUL	979	1203	1356	77	1509	1733	1761

COLVILLE - PEND OREILLE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROOSEVELT	5232.0	3490.1	3814.0	4547.9
BANKS		NO REPORT		

COLVILLE - PEND OREILLE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
COLVILLE RIVER	0	0	0
PEND OREILLE RIVER	61	73	64
KETTLE RIVER	1	64	56

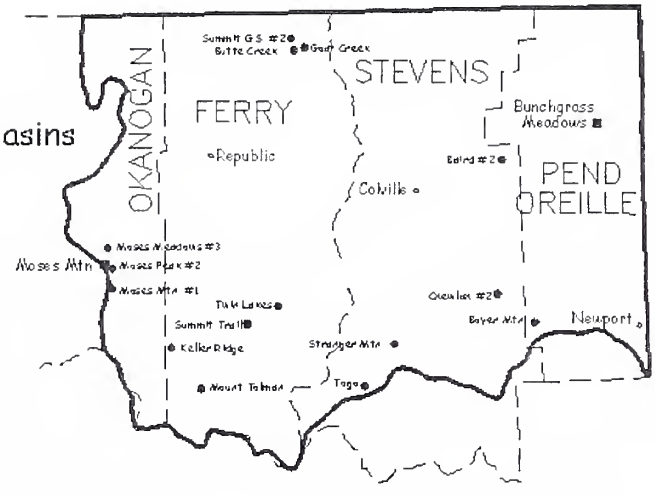
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

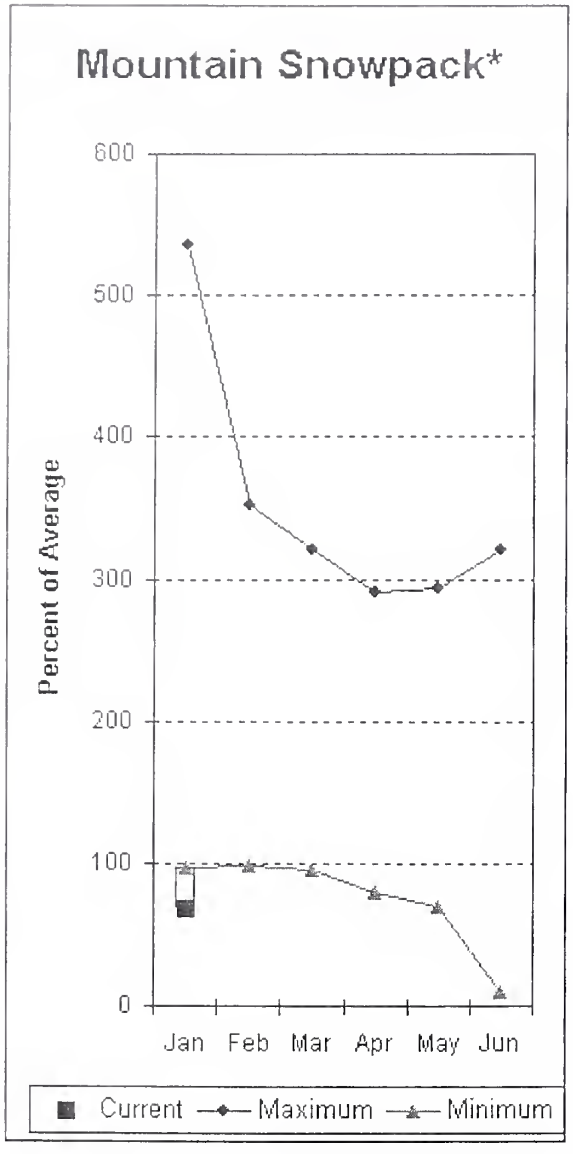
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

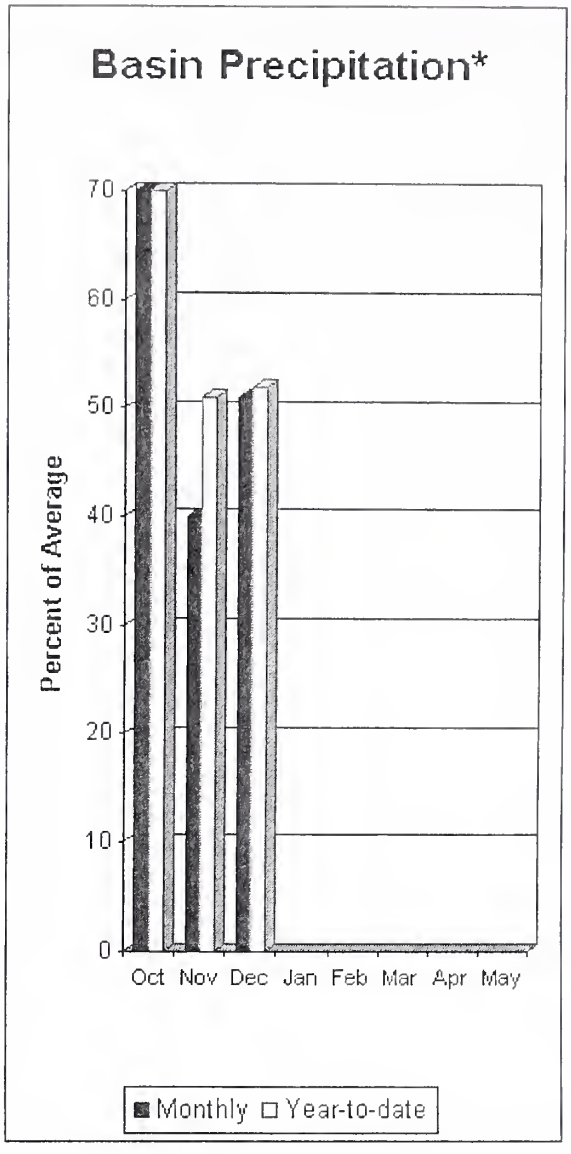
Colville-Pend Oreille River Basins
Percent of Average
January 1, 2001

Snowpack - 64%
Precipitation - 49%
Reservoir - 77%



Okanogan - Methow River Basins





*Based on selected stations

Summer runoff average forecast for the Okanogan River is 72%, Similkameen River is 72%, Methow River is 76% and Salmon Creek is 72%. January 1 snow cover on the Okanogan was 68% of average and Methow was 60%. Moses Mountain SNOTEL site had a January 1 reading of 52% of average. December precipitation in the Okanogan-Methow was 51% of average, with precipitation for the water year at 52% of average. December streamflow for the Methow River was 69% of average, 69% for the Okanogan River and 51% for the Similkameen. Snow-water -content at the Salmon Meadows SNOTEL, near Conconully, was 2.9 inches. Average for this site is 3.9 inches on January 1. Combined storage in the Conconully Reservoirs was 12,400-acre feet, which is 53% of capacity and 93% of the January 1 average. Temperatures were slightly above normal for the past month and through out the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SIMILKAMEEN near Nighthawk (1)	APR-JUL	305	759	965	74	1171	1625	1304
	APR-SEP	299	781	1000	72	1219	1701	1399
OKANOGAN near Tonasket (1)	APR-JUL	283	835	1085	74	1335	1887	1466
	APR-SEP	293	896	1170	72	1444	2047	1623
SALMON CREEK near Conconully	APR-JUL	0.2	7.7	13.8	72	19.9	29	19.1
	APR-SEP	0.2	8.1	14.4	72	21	30	20
METHOW RIVER near Pateros	APR-SEP	411	595	720	76	845	1029	942
	APR-JUL	398	566	680	78	794	962	873

OKANOGAN - METHOW RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
SALMON LAKE	10.5	7.0	7.4	7.5
CONCONULLY RESERVOIR	13.0	5.4	9.9	5.9

OKANOGAN - METHOW RIVER BASINS
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OKANOGAN RIVER	3	72	68
OMAK CREEK	1	52	52
SANPOIL RIVER	0	0	0
SIMILKAMEEN RIVER	1	138	57
TOATS COULEE CREEK	0	0	0
CONCONULLY LAKE	1	107	74
METHOW RIVER	3	61	60

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

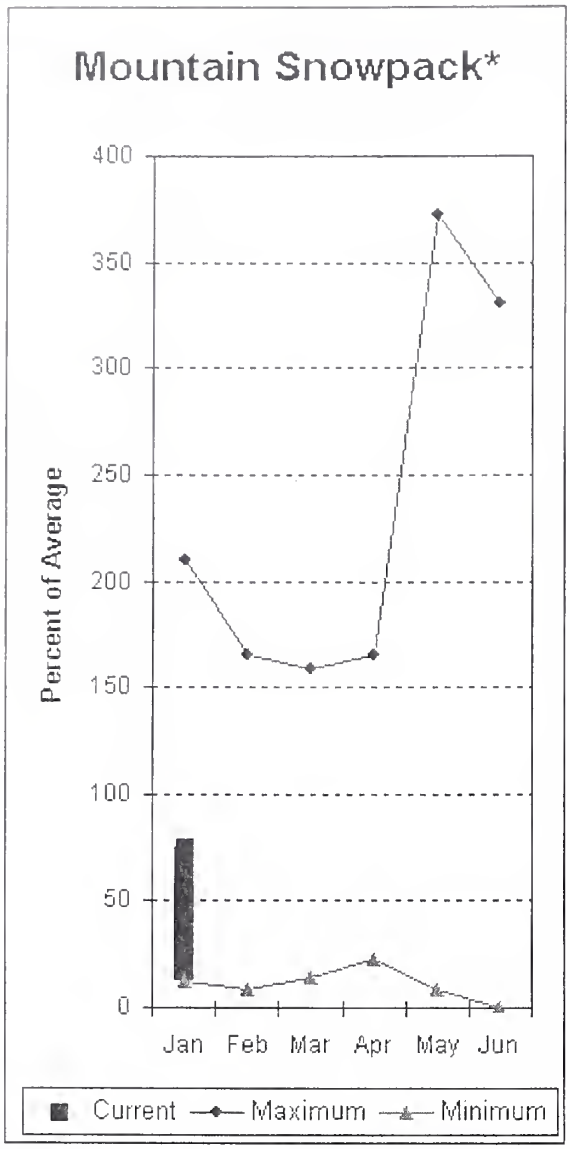
The average is computed for the 1961-1990 base period.

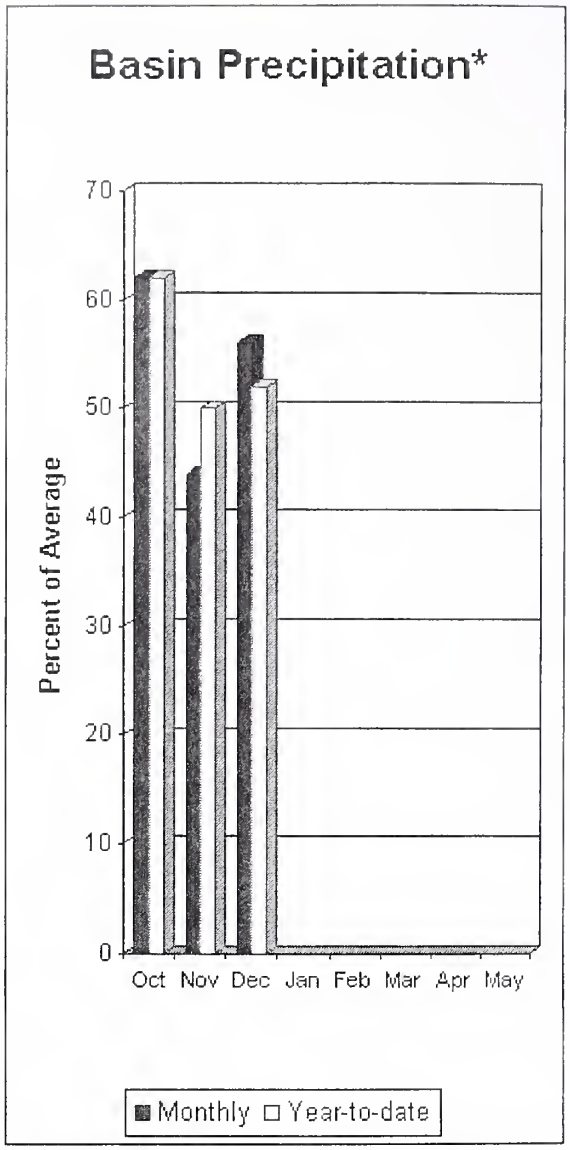
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Okanogan-Methow River Basins
Percent of Average
January 1, 2001

Snowpack - 68%
Precipitation - 52%
Reservoir - 93%

Wenatchee - Chelan River Basins





*Based on selected stations

Precipitation during December was 56% of average in the basin and 52% for the year-to-date. Runoff for Entiat River is forecast to be 77% of average for the summer. The April-September average forecast for Chelan River is 75%, Wenatchee River at Plain is 79% and Stehekin is 76%. Icicle, Stemilt and Squilchuck creeks are all forecasted to have slightly below average flows this summer. December average streamflows on the Chelan River were 41% and on the Wenatchee River 33%. January 1 average snowpack in Wenatchee Basin was 761%, in Chelan Basin was 57%; and Stemilt Creek was 105%. Snowpack in the Entiat River Basin was 64% of average. Reservoir storage in Lake Chelan was 351,100-acre feet, 93% of January 1 average and 52% of capacity. Lyman Lake SNOTEL had the most snow water with 15.8 inches of water. This site would normally have 25.4 inches on January 1. Temperatures were about 1 degree above normal for December.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CHELAN RIVER near Chelan	APR-SEP	719	809	870	75	931	1021	1160
	APR-JUL	670	742	790	77	838	910	1024
STEHEKIN near STEHEKIN	APR-SEP	513	580	625	76	670	737	827
	APR-JUL	481	524	554	79	584	627	701
ENTIAT RIVER near Ardenvoir	APR-SEP	103	146	175	77	204	247	227
	APR-JUL	96	135	162	79	189	228	206
WENATCHEE at Plain	APR-SEP	648	822	940	79	1058	1232	1190
	APR-JUL	642	783	879	82	975	1116	1072
WENATCHEE R. at Peshastin	APR-SEP	760	1040	1230	75	1420	1700	1636
	APR-JUL	604	926	1145	77	1364	1686	1485
STEMILT nr Wenatchee (miners in)	MAY-SEP	61	90	110	80	130	159	138
ICICLE CREEK near Leavenworth	APR-SEP	225	263	289	84	315	353	344
	APR-JUL	207	243	267	84	291	327	318

WENATCHEE - CHELAN RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CHELAN LAKE	676.1	351.1	517.8	378.7

WENATCHEE - CHELAN RIVER BASINS
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
CHELAN LAKE BASIN	4	58	57
ENTIAT RIVER	1	91	64
WENATCHEE RIVER	10	89	76
SQUILCHUCK CREEK	0	0	0
STEMILT CREEK	1	182	105
COLOCKUM CREEK	0	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

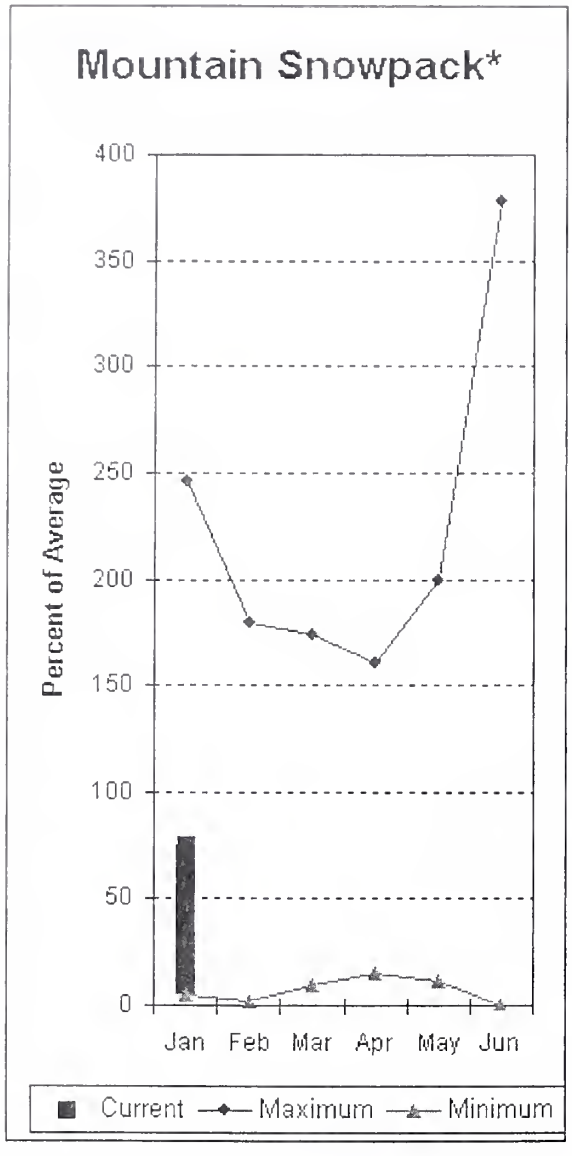
The average is computed for the 1961-1990 base period.

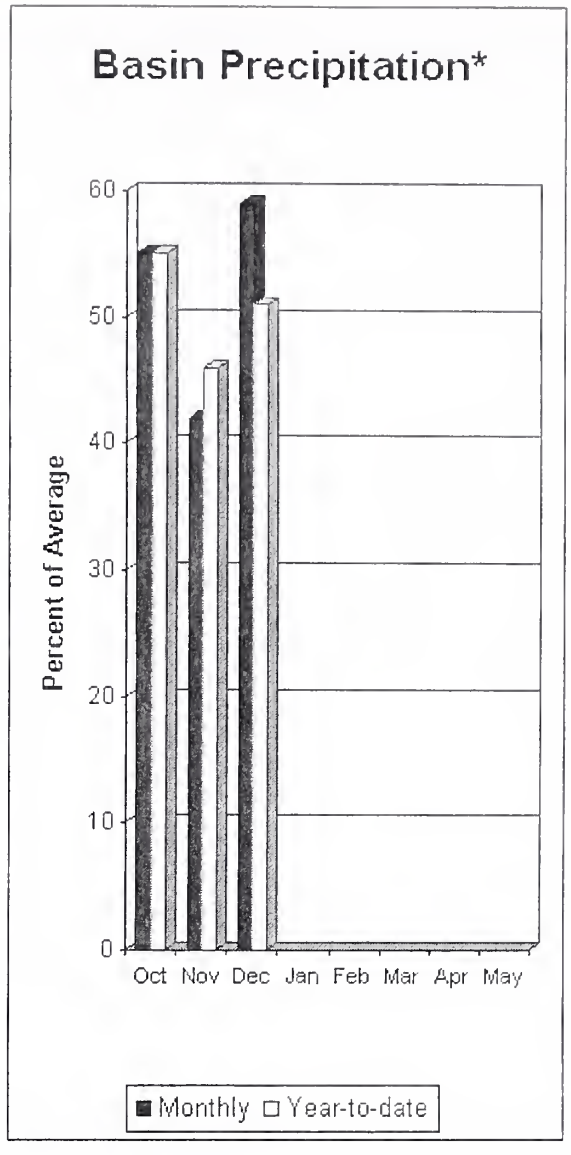
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Wenatchee-Chelan River Basins
Percent of Average
January 1, 2001

Snowpack - 75%
Precipitation - 52%
Reservoir - 93%

Upper Yakima River Basin





*Based on selected stations

January 1 reservoir storage for the Upper Yakima reservoirs was 235,000-acre feet, 50% of average. Forecasts for the Yakima River at Cle Elum are 86% of average. Lake inflows are all expected to be slightly below average this summer. December streamflows within the basin were Yakima near Cle Elum at 21% and Cle Elum River near Roslyn at 14%. January 1 snowpack was 75% based upon 9 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 59% of average for December and 51% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KEECHELUS LAKE INFLOW	APR-JUL	75	97	112	90	127	149	124
	APR-SEP	79	103	119	88	135	159	135
KACHESS LAKE INFLOW	APR-JUL	64	86	100	90	114	136	111
	APR-SEP	66	89	104	88	119	142	118
CLE ELUM LAKE INFLOW	APR-JUL	251	313	355	87	397	459	409
	APR-SEP	263	333	380	85	427	497	448
YAKIMA at Cle Elum	APR-JUL	507	641	732	88	823	957	832
	APR-SEP	548	692	790	86	888	1032	915
TEANAWAY near Cle Elum	APR-JUL	73	97	113	80	129	153	141
	APR-SEP	76	100	116	80	132	156	145

UPPER YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
KEECHELUS	157.8	26.1	81.2	83.0
KACHESS	239.0	113.7	185.6	159.1
CLE ELUM	436.9	95.2	321.6	230.2

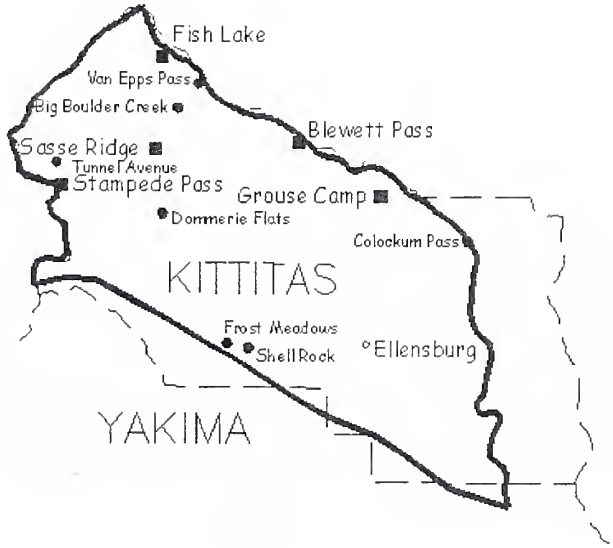
UPPER YAKIMA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER YAKIMA RIVER	10	84	75

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

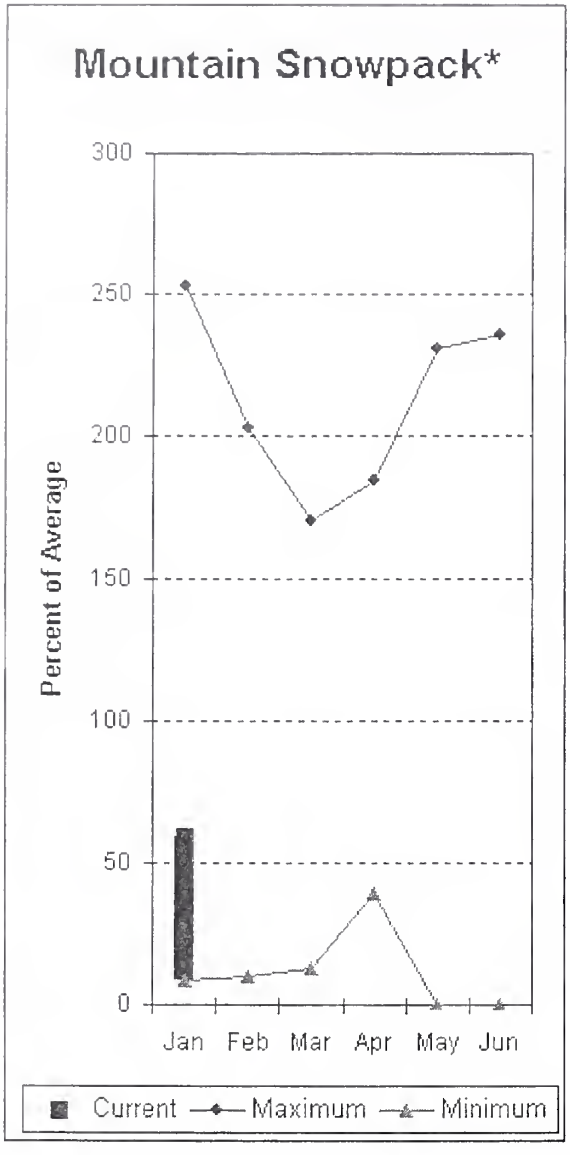
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

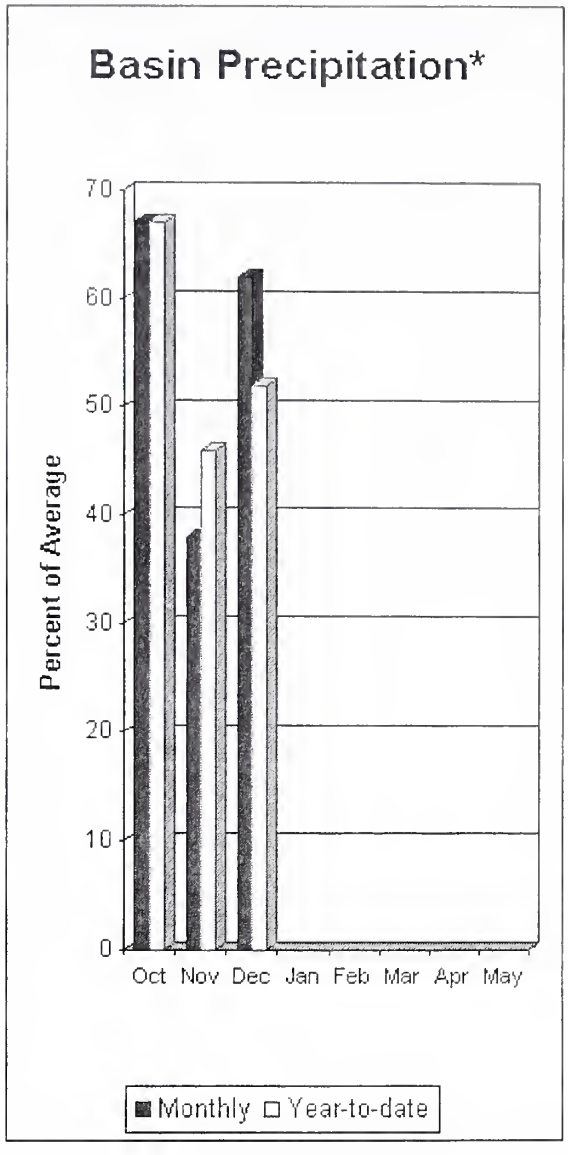


Upper Yakima River Basin
Percent of Average
January 1, 2001

Snowpack - 75%
Precipitation - 51%
Reservoir - 50%

Lower Yakima River Basin





*Based on selected stations

December average streamflows within the basin were: Yakima River near Parker, 23%; Naches River near Naches, 27%; and Yakima River at Kiona, 55%. January 1 reservoir storage for Bumping and Rimrock reservoirs was 96,900-acre feet, 89% of average. Forecast averages for Yakima River at Parker are 78%; American River near Nile, 87%; Ahtanum Creek, 65%; and Klickitat River near Glenwood, 82%. January 1 snowpack was 59% based upon 8 snow courses and SNOTEL readings within the Lower Yakima Basin. Precipitation was 62% of average for December and 52% year-to-date for water. Temperatures were near normal for the month and 2 degrees below average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BUMPING LAKE INFLOW	APR-SEP	71	95	111	82	127	151	136
	APR-JUL	67	88	102	82	116	137	124
AMERICAN RIVER near Nile	APR-SEP	72	90	103	87	116	134	118
	APR-JUL	66	83	95	87	107	124	109
RIMROCK LAKE INFLOW	APR-SEP	138	171	193	81	215	248	238
	APR-JUL	116	143	162	81	181	208	200
NACHES near Naches	APR-SEP	455	580	665	80	750	875	832
	APR-JUL	424	541	620	82	699	816	755
AHTANUM CREEK nr Tampico (2)	APR-SEP	9.0	22	30	65	39	51	46
	APR-JUL	8.8	20	28	67	36	47	42
YAKIMA near Parker	APR-SEP	1066	1360	1560	78	1760	2054	1994
	APR-JUL	981	1257	1445	80	1633	1909	1805
KLICKITAT near Glenwood	APR-JUN	55	77	91	83	105	127	110
	APR-SEP	70	97	115	82	133	160	140

LOWER YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BUMPING LAKE	33.7	3.8	15.6	6.3
RIMROCK	198.0	93.1	133.6	102.1

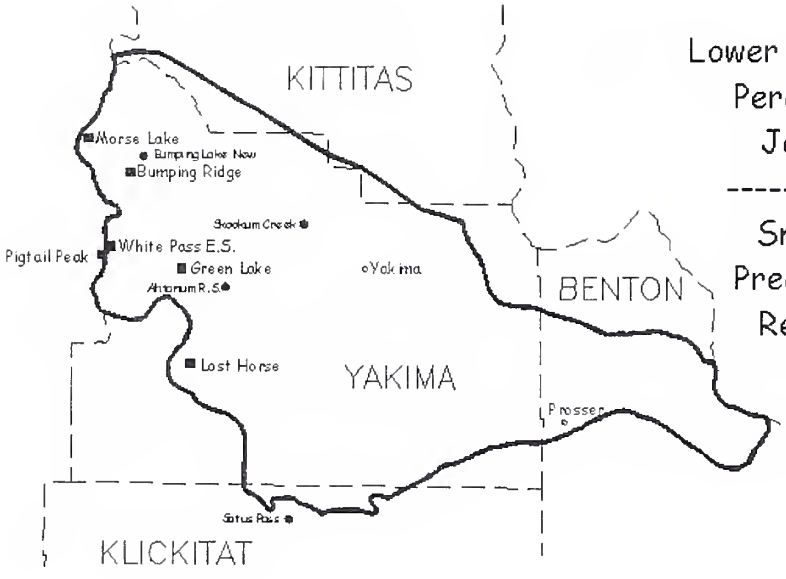
LOWER YAKIMA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

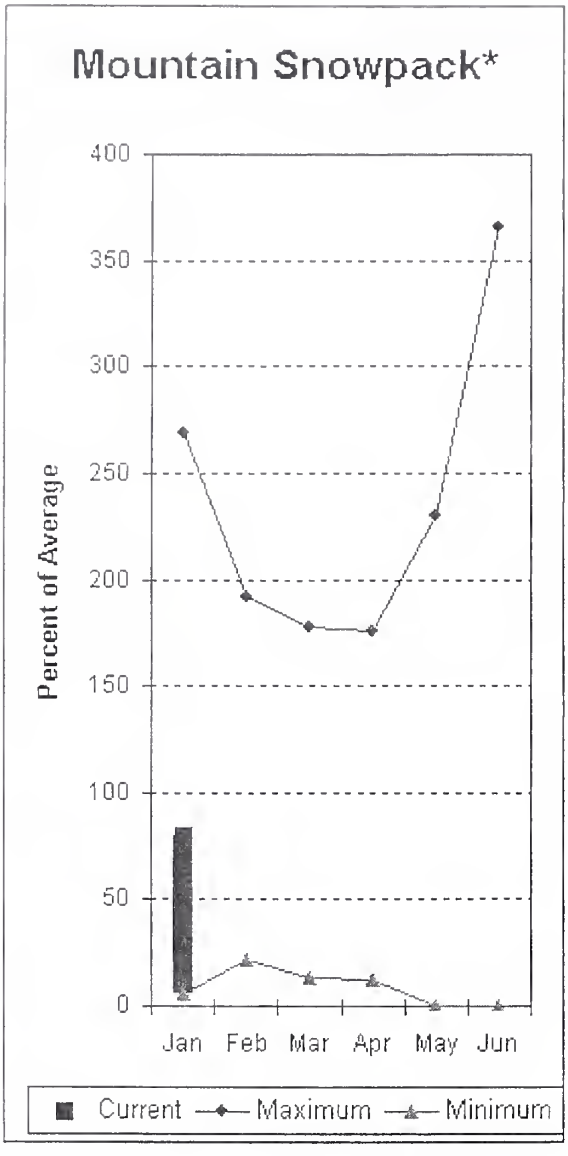
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

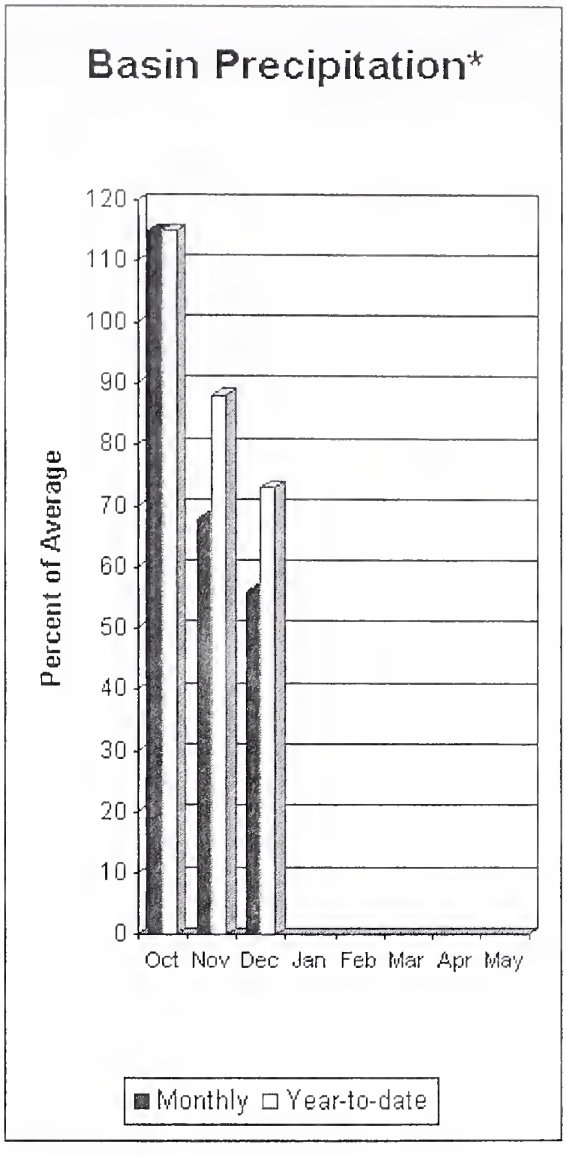


Lower Yakima River Basin
Percent of Average
January 1, 2001

Snowpack - 59%
Precipitation - 52%
Reservoir - 89%

Walla Walla River Basin





*Based on selected stations

December precipitation was 56% of average, bringing the year-to-date precipitation to 73% of average. January 1 average snowpack was at 80%. The forecast for the coming summer is for 87% of average streamflow in the South Fork Walla Walla River and 101% for Mill Creek. December streamflow was 55% of average for the Walla Walla River. The Touchet SNOTEL site had 9.7 inches of snow-water-equivalent. The average January 1 reading for this site is 12.9 inches. Average temperatures were 2 degrees below normal for December and have averaged 3 degrees below normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
MILL CREEK at Walla Walla	APR-SEP	7.5	13.3	17.3	101	21	27	17.1
	APR-JUL	7.2	13.0	17.0	101	21	27	16.9
SF WALLA WALLA near Milton-Freewater	APR-JUL	40	47	52	98	57	64	53
	APR-SEP	51	59	64	97	69	77	66

WALLA WALLA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

WALLA WALLA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WALLA WALLA RIVER	2	106	80

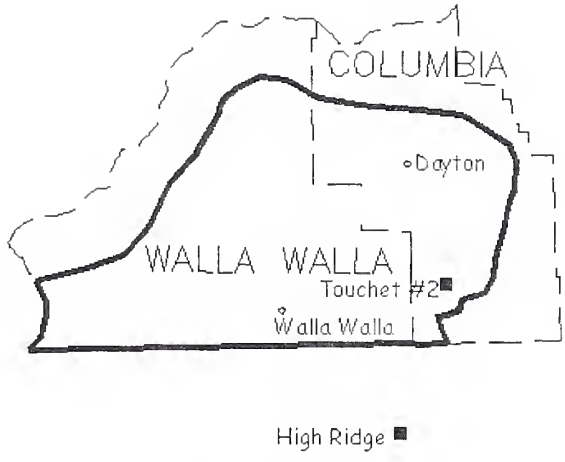
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

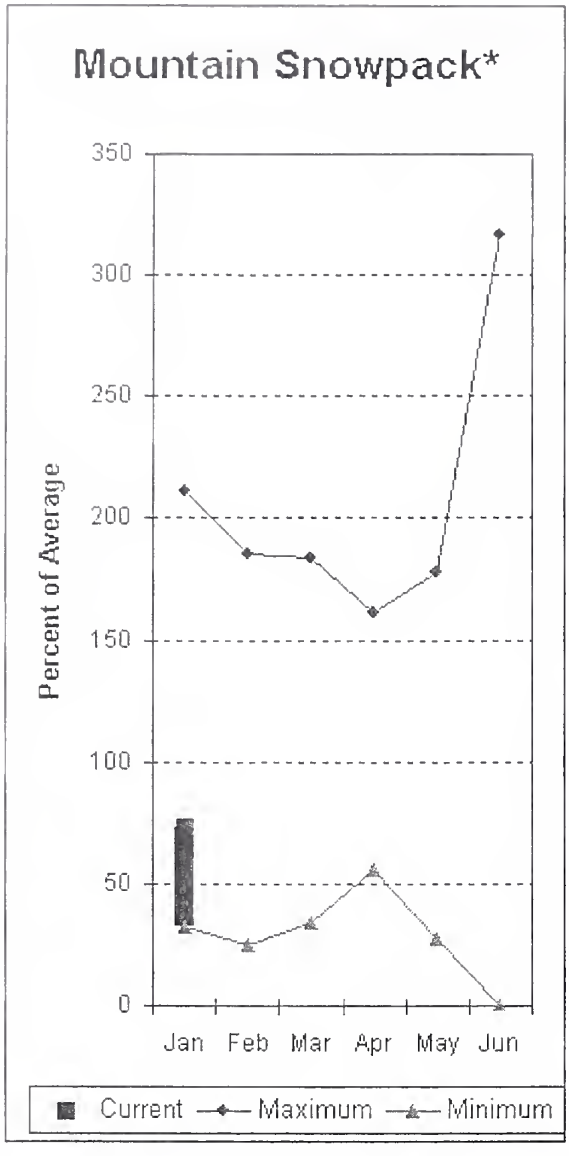
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

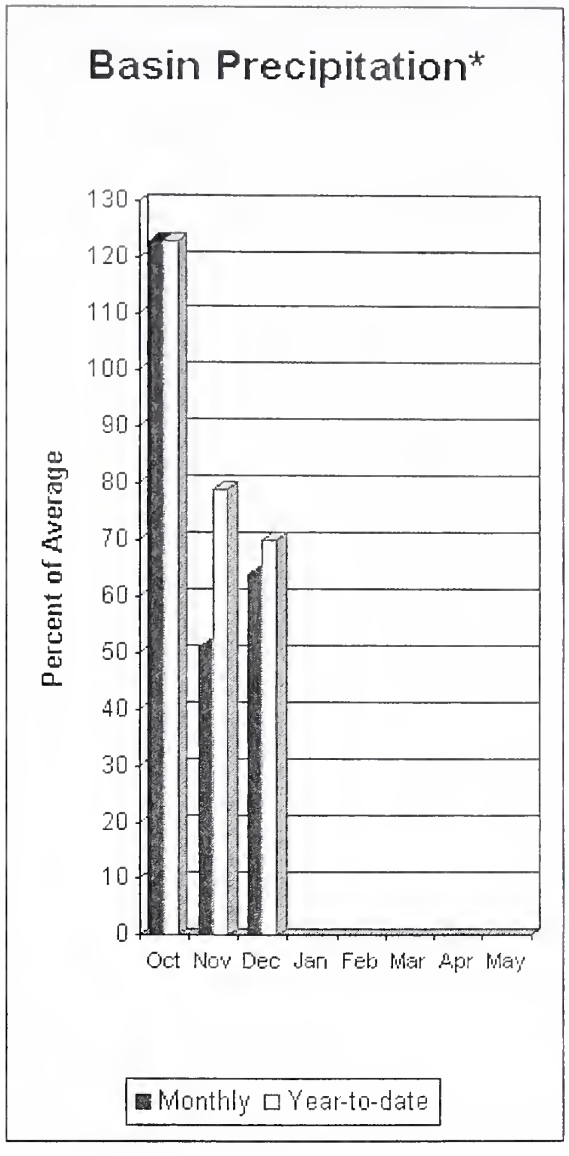
Walla Walla River Basin
Percent of Average
January 1, 2001

Snowpack - 80%
Precipitation - 73%



Lower Snake River Basin





*Based on selected stations

The April - September forecast is for 80% of average streamflow in the Snake River below Lower Granite Dam, 92% for Grande Ronde at Troy, and 89% for Clearwater River at Spalding. December precipitation was 64% of average, bringing the year-to-date precipitation to 70% of average. January 1 snowpack was at 73% of average. December streamflow was 58% of average for Snake River below Lower Granite Dam and 46% for Grande Ronde River near Troy. Average temperatures were near normal for December but remain slightly below normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GRANDE RONDE at Troy (1)	MAR-JUL	582	1093	1325	90	1557	2068	1471
	APR-SEP	526	990	1200	92	1410	1874	1312
CLEARWATER at Spalding (1,2)	APR-JUL	4177	5967	6780	89	7593	9383	7618
	APR-SEP	4510	6339	7170	89	8001	9830	8051
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	6327	13804	17200	79	20596	28073	21650
	APR-SEP	7182	15584	19400	80	23216	31618	24360

LOWER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

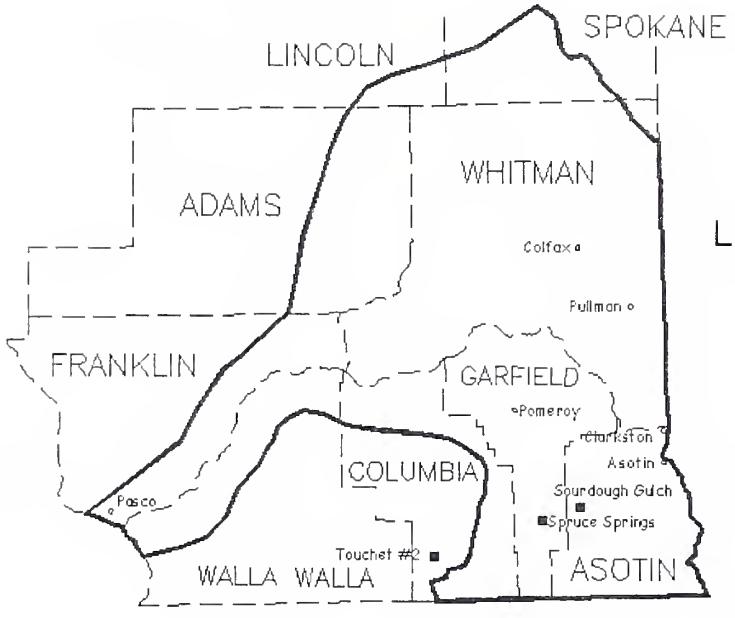
LOWER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LOWER SNAKE, GRANDE RONDE	10	69	73

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

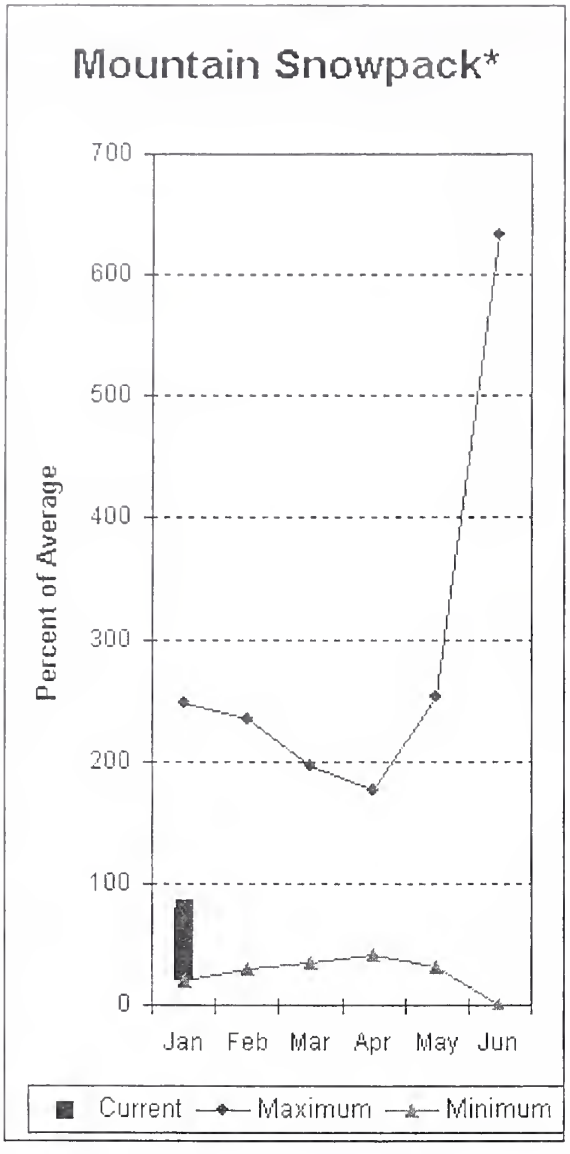
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

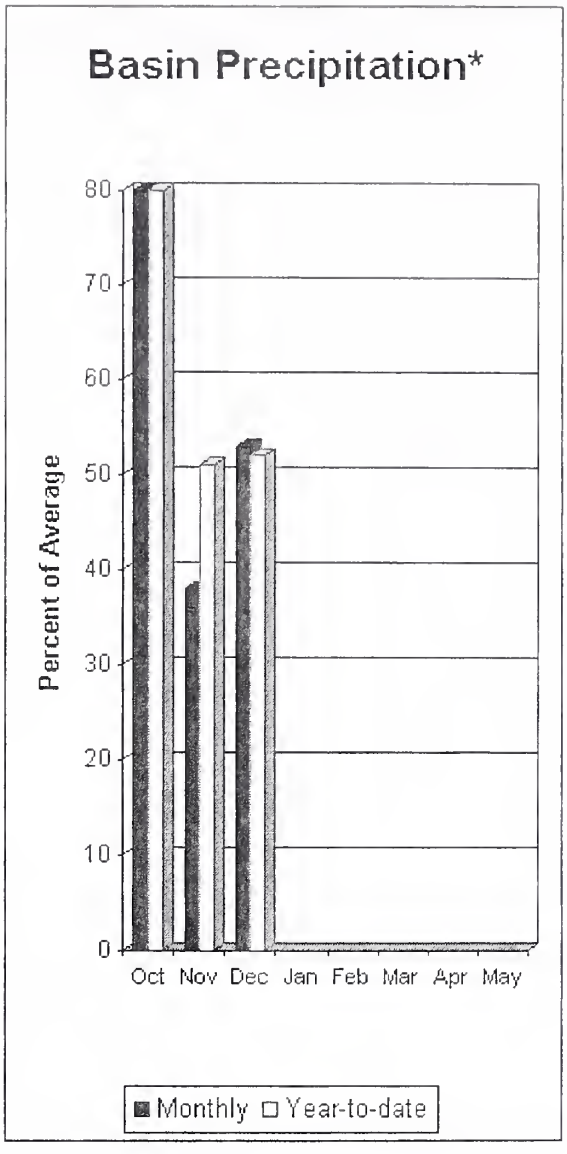


Lower Snake River Basin
Percent of Average
January 1, 2001

Snowpack - 73%
Precipitation - 70%

Cowlitz - Lewis River Basins





*Based on selected stations

Early season forecasts for April – September flows within the basin show a tight range of 81-84% of average. December average streamflow for Cowlitz River was 29% and 36% for Lewis River. December precipitation was 53% of average and the water-year average was 52%. January 1 snow cover for Cowlitz River was 66%, and Lewis River was 94% of average. The Paradise Park SNOTEL recorded the most water content for the basin with 16.9 inches of water. Average January 1 water content is 23.6 inches. Average temperatures were near to slightly above normal during December.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LEWIS at Ariel (2)	APR-JUL	564	751	879	84	1007	1194	1053
	APR-SEP	684	878	1010	84	1142	1336	1206
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	220	1036	1590	81	2144	2960	1970
	APR-JUL	32	847	1400	81	1953	2768	1731
COWLITZ R. at Castle Rock (2)	APR-SEP	253	1388	2160	81	2932	4067	2667
	APR-JUL	1298	1645	1880	81	2115	2462	2325
KLICKITAT near Glenwood	APR-JUN	55	77	91	83	105	127	110
	APR-SEP	70	97	115	82	133	160	140

COWLITZ - LEWIS RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

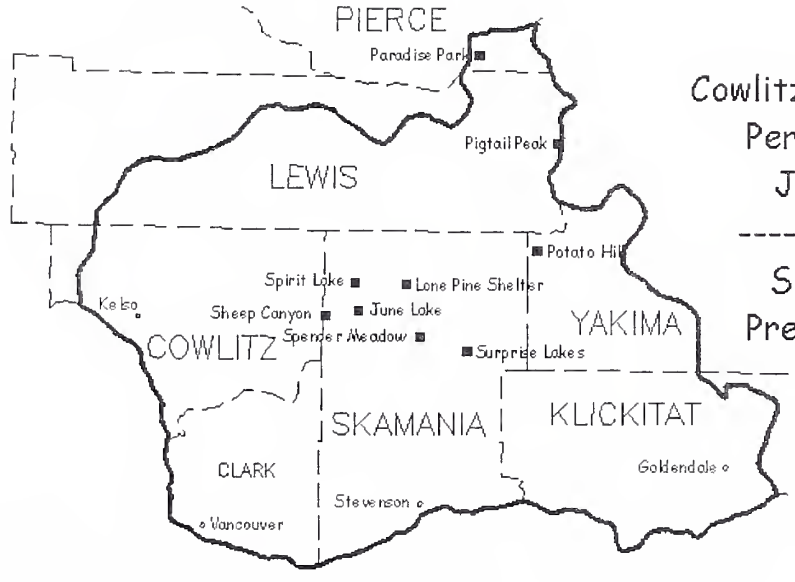
COWLITZ - LEWIS RIVER BASINS
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LEWIS RIVER	4	76	94
COWLITZ RIVER	7	69	66

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

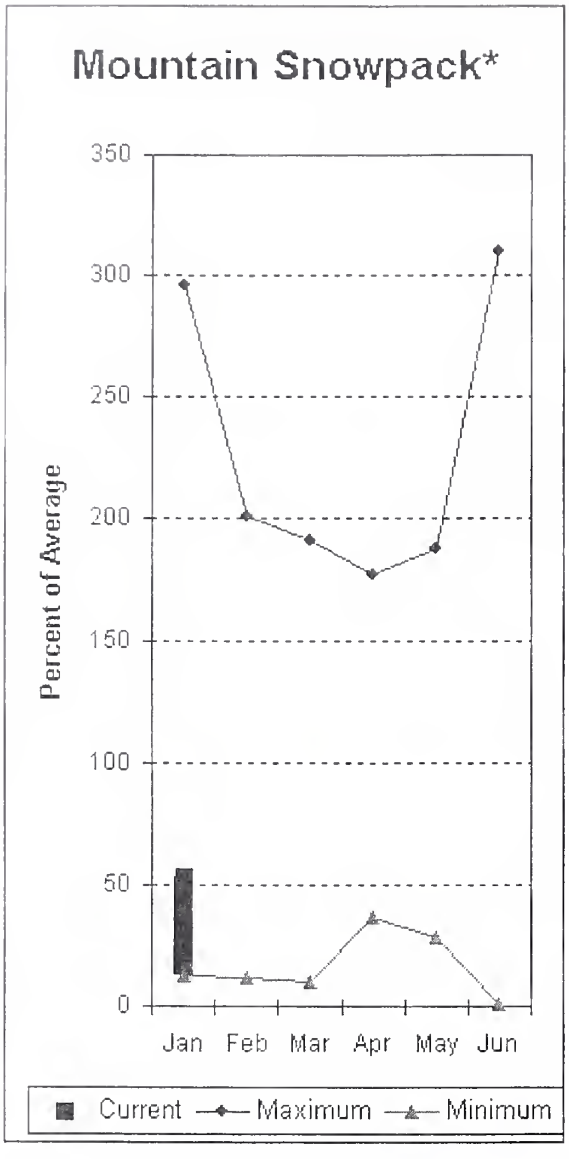
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

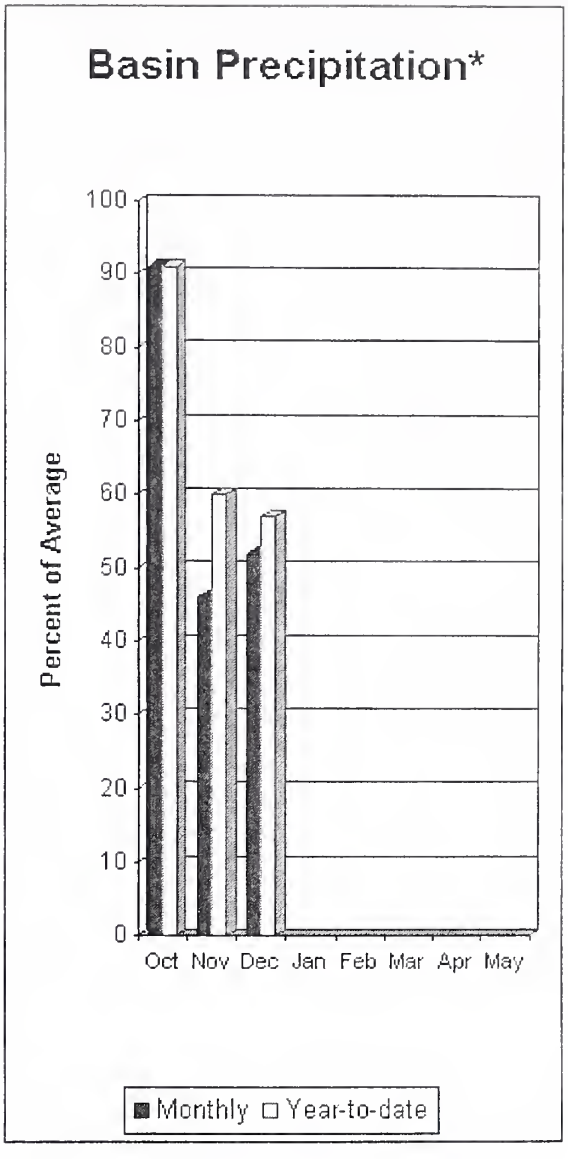


Cowlitz-Lewis River Basins
Percent of Average
January 1, 2001

Snowpack - 80%
Precipitation - 52%

White - Green River Basins





*Based on selected stations

Summer runoff is forecast to be near normal for both the Green River below Howard Hanson Dam and the White River near Buckley. January 1 snowpack was 51% of average in both White River and Puyallup river basins and 57% in Green River Basin. Water content on January 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 8.6 inches. This site has a January 1 average of 13.5 inches. December precipitation was 52% of average, bringing the water year-to-date to 57% of average for the basins. Average temperatures in the area were slightly above normal.

For more information contact your local Natural Resources Conservation Service office.

White - Green - Puyallup River Basins

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<======= Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WHITE near Buckley (1,2)	APR-JUL	302	390	430	96	470	558	447
	APR-SEP	376	476	522	96	568	668	542
GREEN below Howard Hanson (1,2)	APR-JUL	156	220	249	97	278	342	257
	APR-SEP	184	247	276	97	305	368	285

WHITE - GREEN - PUYALLUP RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

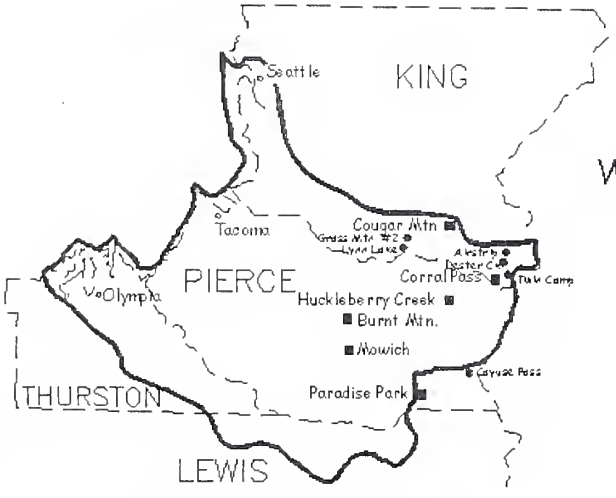
WHITE - GREEN - PUYALLUP RIVER BASINS
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WHITE RIVER	3	49	51
GREEN RIVER	6	66	55
PUYALLUP RIVER	3	49	51

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

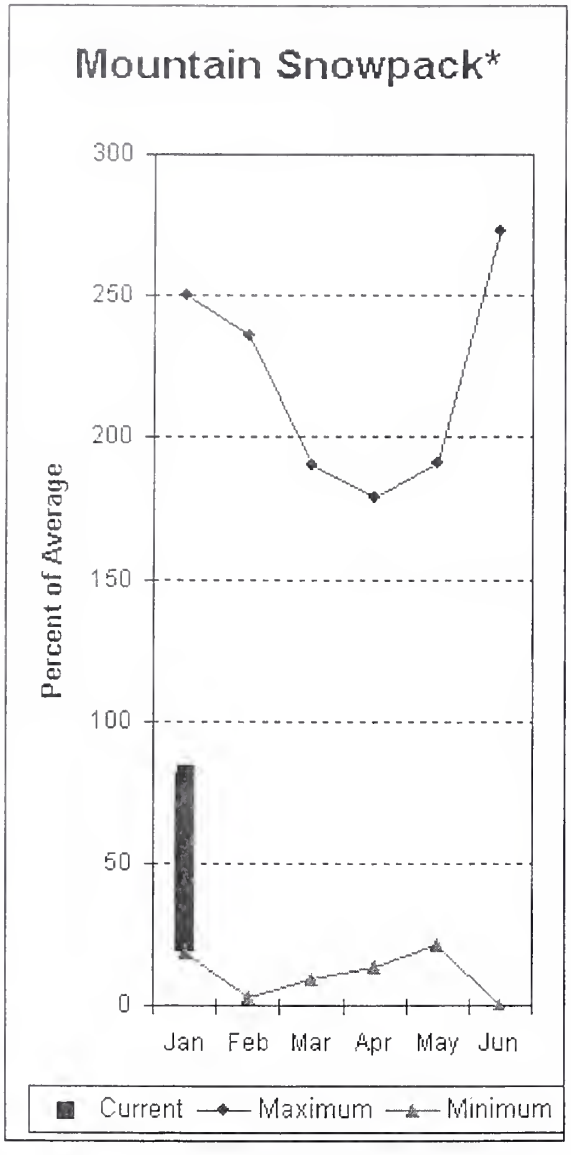
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

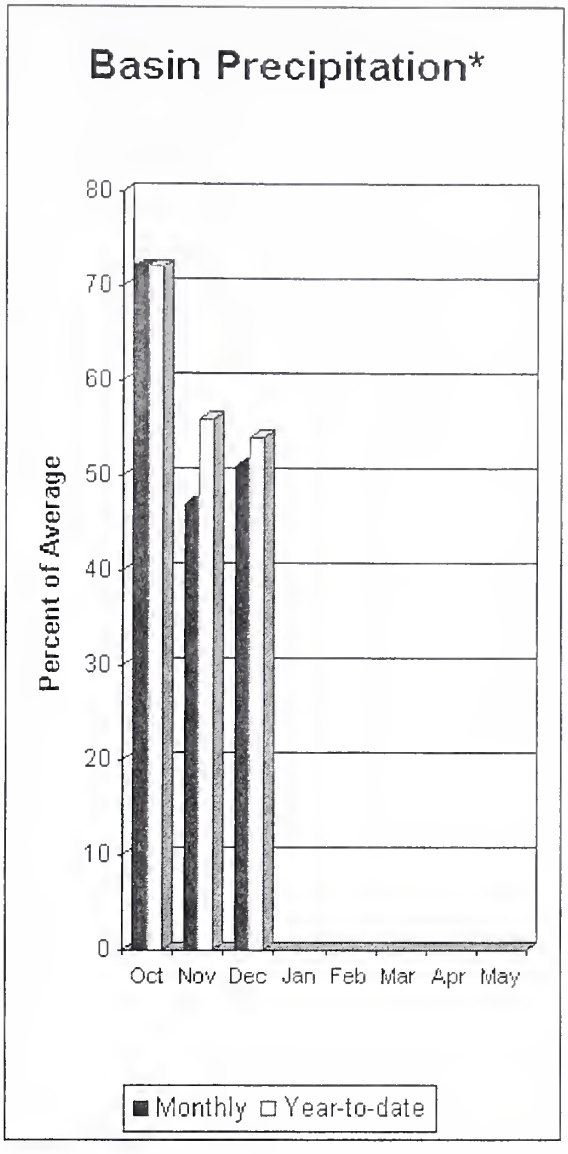


White-Green-Puyallup Basins
Percent of Average
January 1, 2001

Snowpack - 53%
Precipitation - 57%

Central Puget Sound River Basins





*Based on selected stations

Forecast for spring and summer flows are: 95% for Cedar River near Cedar Falls; 95% for Rex River; 94% for South Fork of the Tolt River; and 93% for Cedar River at Cedar Falls. Basin-wide precipitation for December was 51% of average, bringing water-year-to-date to 54% of average. January 1 average snow cover in Cedar River Basin was 91%, Tolt River Basin was 71%, Snoqualmie River Basin was 70%, and Skykomish River Basin was 76%. Stevens Pass SNOTEL, at 4,070 feet, had 10.7 inches of water content. Average January 1 water content is 15.3 inches. December temperatures were slightly above normal for the past month.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CEDAR near Cedar Falls	APR-JUL	45	62	73	95	84	101	77
	APR-SEP	51	68	80	95	92	109	84
REX near Cedar Falls	APR-JUL	14.8	21	26	95	30	37	27
	APR-SEP	17.1	24	29	95	34	41	30
CEDAR RIVER at Cedar Falls	APR-JUL	32	58	76	93	94	121	82
	APR-SEP	30	58	77	93	97	125	83
SOUTH FORK TOLT near Index	APR-JUL	10.6	12.8	14.3	94	15.8	18.0	15.2
	APR-SEP	12.4	15.0	16.7	94	18.4	21	17.8

CENTRAL PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

CENTRAL PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
CEDAR RIVER	4	105	109
TOLT RIVER	2	60	71
SNOQUALMIE RIVER	5	65	70
SKYKOMISH RIVER	3	75	76

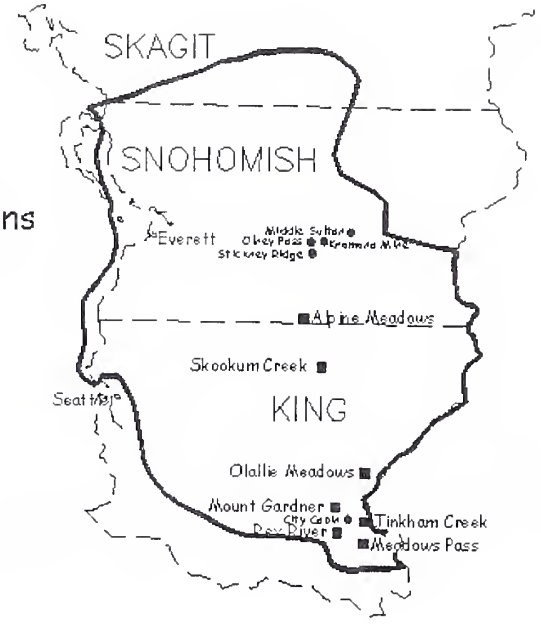
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

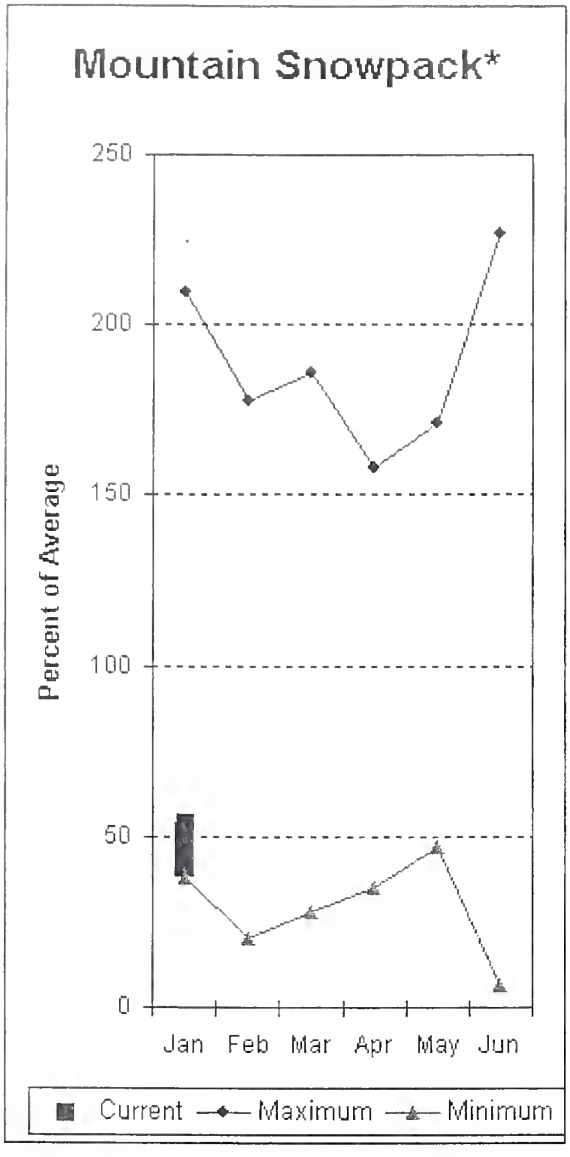
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

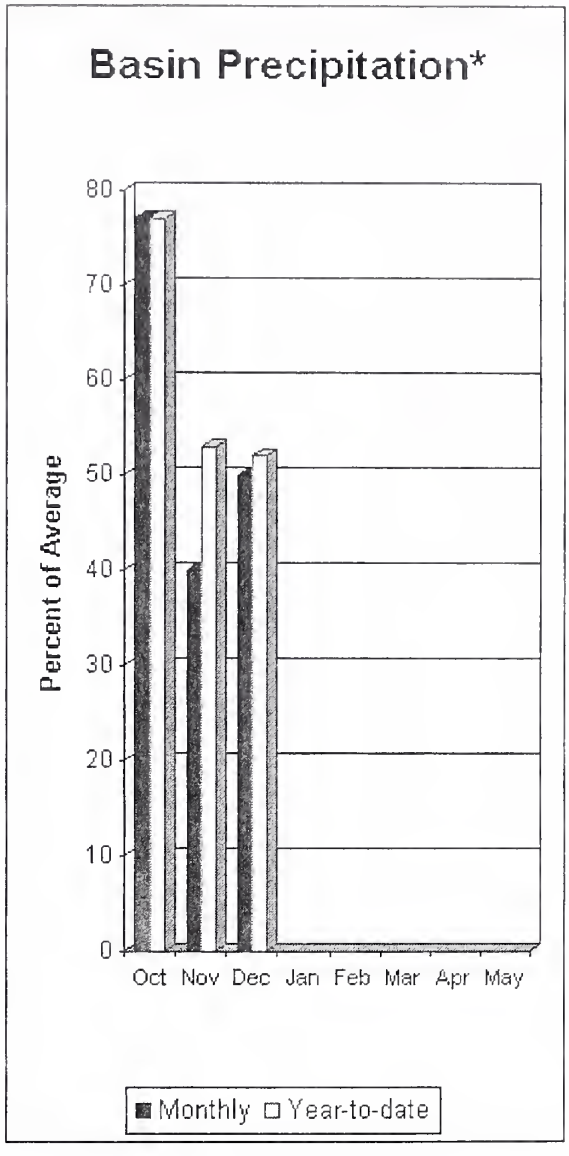
Central Puget Sound Basins
Percent of Average
January 1, 2001

Snowpack - 81%
Precipitation - 54%



North Puget Sound River Basins





*Based on selected stations

Forecast for Skagit River streamflow is 81% of average for the spring and summer period. December streamflow in Skagit River was 37% of average. Other forecast points included Baker River at 91% and Thunder Creek at 90% of average. Basin-wide precipitation for December was 50% of average, bringing water-year-to-date to 52% of average. January 1 average snow cover in Skagit River Basin was 60%, and Nooksack River Basin was 50%. Rainy Pass SNOTEL, at 4,780 feet, had 8.4 inches of water content. Average January 1 water content was 15.4 inches. January 1 Skagit River reservoir storage was 122% of average and 68% of capacity. Average December temperatures were near normal for the basin.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<<<<<< Drier ====== Future Conditions ======= Wetter ======>> 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
THUNDER CREEK near Newhalem	APR-JUL	173	193	206	90	219	239	230
	APR-SEP	256	279	295	90	311	334	328
SKAGIT at Newhalem (2)	APR-JUL	1316	1448	1537	82	1626	1758	1879
	APR-SEP	1504	1663	1772	81	1881	2040	2191
BAKER RIVER near Concrete	APR-JUL	588	687	754	90	821	920	836
	APR-SEP	778	889	965	91	1041	1152	1064

NORTH PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROSS	1404.1	953.1	1265.3	783.9
DIABLO RESERVOIR	90.6	87.3	85.5	---
GORGE RESERVOIR		NO REPORT		

NORTH PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SKAGIT RIVER	3	60	60
BAKER RIVER	2	49	53
NOOKSACK RIVER	2	47	50

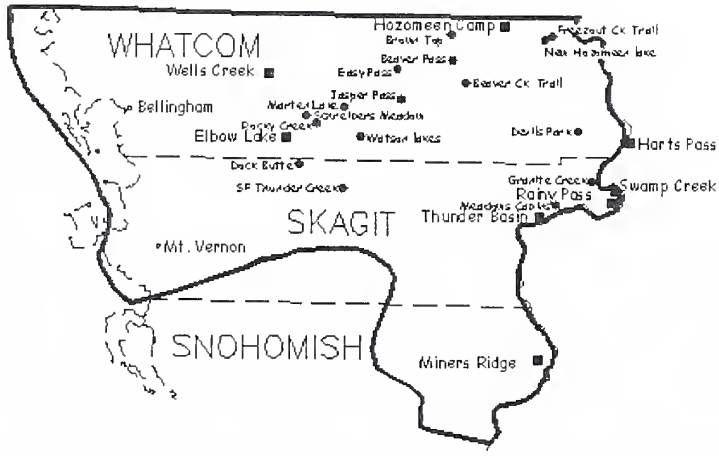
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

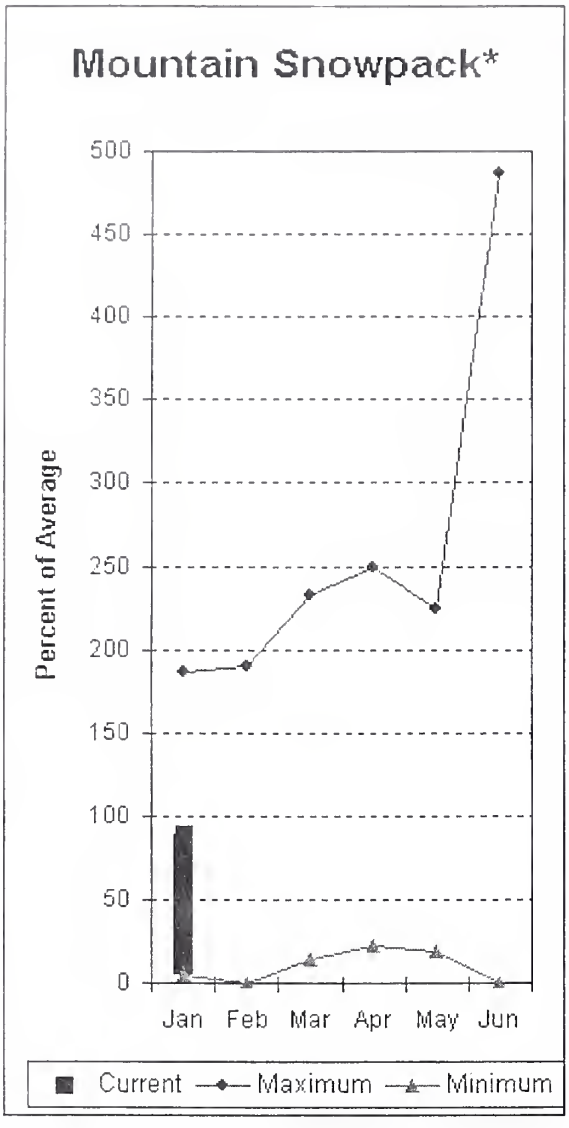
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

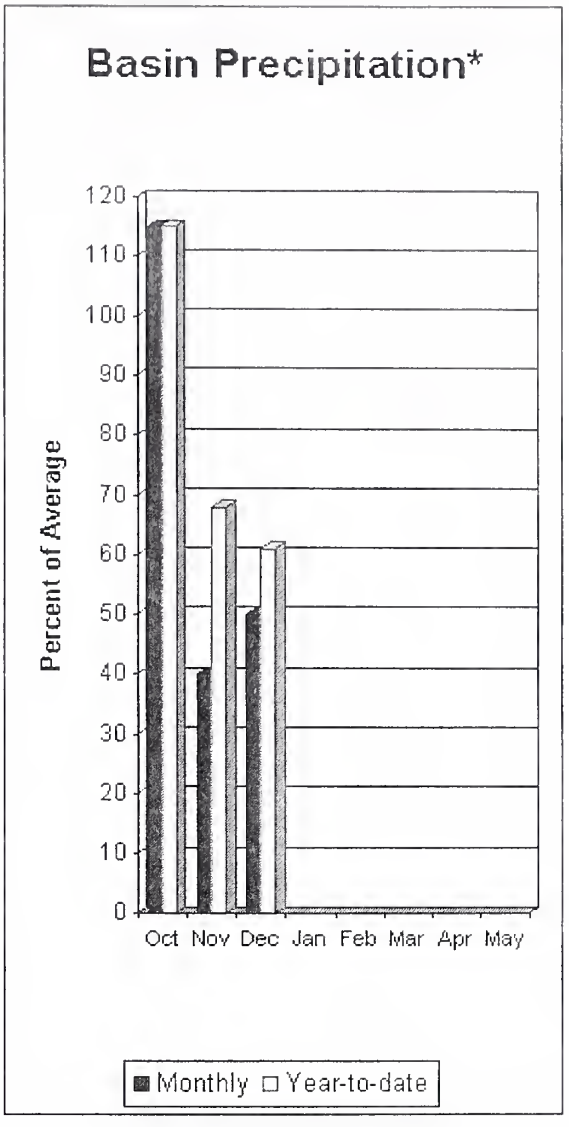
North Puget Sound Basins
Percent of Average
January 1, 2001

Snowpack - 54%
Precipitation - 52%
Reservoir - 122%



Olympic Peninsula River Basins





*Based on selected stations

Forecasted average runoff for streamflow in Dungeness River Basin is 88% and 96% for Elwha River. Big Quilcene and Wynoochee rivers should expect near average runoff this summer also. December precipitation was 50% of average. Precipitation has accumulated at 61% of average for the water year. December precipitation at Quillayute was 6.71 inches. The thirty-year average for December is 14.62 inches. January 1 snow cover in the Olympic Basin was at 89% of average. The Mount Crag SNOTEL near Quilcene had 10.1 inches of snow-water-equivalent on January 1. Average for this site is 11.3 inches. Temperatures were 1 degree above average for the month and slightly below average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DUNGENESS near Sequim	APR-SEP	94	118	135	88	152	176	153
	APR-JUL	77	97	111	89	125	145	125
ELWHA near Port Angeles	APR-SEP	347	432	490	96	548	633	510
	APR-JUL	291	359	405	96	451	519	424

OLYMPIC PENINSULA RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

OLYMPIC PENINSULA RIVER BASINS
Watershed Snowpack Analysis - January 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OLYMPIC PENINSULA	1	122	89
ELWHA RIVER	0	0	0
MORSE CREEK	0	0	0
DUNGENESS RIVER	0	194	0
QUILCENE RIVER	1	110	89
WYNOOCHEE RIVER	0	0	0

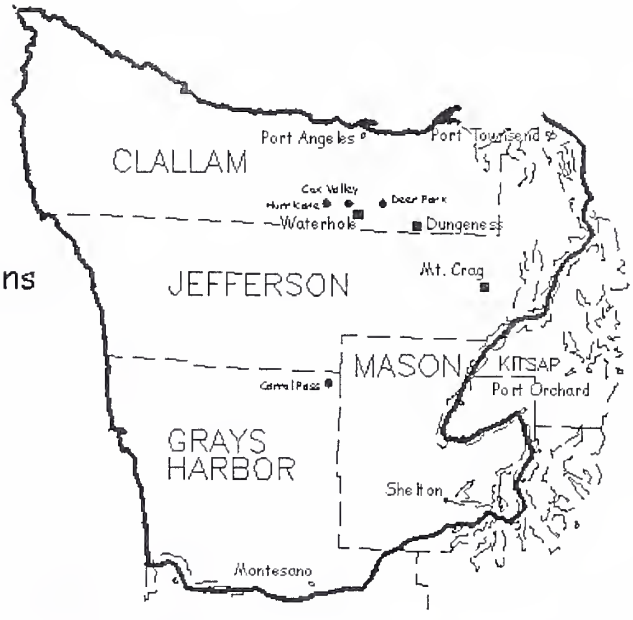
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water

Olympic Peninsula River Basins
Percent of Average
January 1, 2001

Snowpack - 89%
Precipitation - 61%



Issued by

Pearlie S. Reed
Chief
Natural Resources Conservation Service
U.S. Department of Agriculture

Released by

Leonard Jordan
State Conservationist
Natural Resources Conservation Service
Spokane, Washington

The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada	Ministry of the Environment Investigations Branch, Victoria, British Columbia
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

Washington Snow Survey Office
2021 E. College Way, Suite 214
Mount Vernon, WA 98273-2873

FOR OFFICIAL USE ONLY

Washington Basin Outlook Report

Natural Resources Conservation Service
Spokane, WA